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CORY'S INQUIRIES.

I. METAPHYSICAL.
II. MYTHOLOGICAL.
III. CHRONOLOGICAL.

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METAPHYSICAL INQUIRY.

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METAPHYSICAL INQUIRY

INTO THE METHOD OBJECTS AND RESULT OF ANCIENT AND MODERN PHILOSOPHY

BY ISAAC PRESTON CORY ESQ.

FELLOW OF CAIUS COLLEGE

CAMBRIDGE

LONDON:

WILLIAM PICKERING.

1833.

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1875, March 22.
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The following Inquiry was originally published in a more condensed form in 1831, as an Appendix to a collection of Ancient Fragments.

Lambeth. *February* 5, 1833.

C. WHITTINGHAM, LONDON.

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METAPHYSICAL INQUIRY.

THE revival of literature in modern times was slowly followed by the introduction of a better system of philosophy. In some branches of literature we have not surpassed the ancients, and in their philosophy perhaps there are some points, which, even at the present day, may not be altogether unworthy of attention.

To Lord Bacon the philosophic world justly looks up as the father and founder of modern science. Yet we have, in many respects, unconsciously departed from his instructions, and have arrived at conclusions directly the reverse of his. The differences which occur are not such, as, in the infancy of science, might have es-

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caped his notice; but they arise on points, which had been ably discussed before his time, which he had himself examined and scrutinized with the deepest attention, and which he at length admitted from the philosophy of the ancients as principles satisfactorily established.

In the following Inquiry into the Method, Objects, and Result, of the Ancient and Modern systems of Philosophy, I have no intention, nor would I presume to set them in array against each other: but have endeavoured patiently to examine the foundations upon which they rest, and to draw from the great storehouse of antiquity some speculations, which have been too generally slighted or overlooked by the Metaphysician and Philosopher, but which seem to be of such practical utility, that they may tend to the advancement of science, even amid the brilliant discoveries of modern times.

If we were to ask, what was conceived

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to be the great engine of invention and discovery among the ancients, it is highly probable we should be answered that it was Syllogism. And if we were to ask the same question relative to modern science, we should be unhesitatingly assured that it was Induction: and, possibly, at the same time we might be told, that the method of the ancients was something worse than useless. Yet, when we consider, that human nature is the same, and that such admirable productions have been the result of human effort both in ancient and modern times, we shall find reason to suspect that the methods of discovery, or the tools really used in all ages, have been much alike, though their names may have been misapplied, or they may have had no distinct appellations assigned them.

By the INDUCTIVE METHOD we are supposed to go about to collect, by experiment and observation, all the facts

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and circumstances within our reach, relative to the subject in hand. We must examine them in every light, compare their similarities, and mark their differences; we must reject the particulars that are irrelative or negative; and conclude upon the affirmatives that are left. By these means, from the individuals we rise to some general proposition, and we rest assured of its truth as proved by Induction.

To take a common instance: a child that has been burnt by a flame, is afraid of the *same* result from the *same* cause; and such fear or expectation is said to arise from experience: and in the expectation of the *same* result from *similar* causes, he is said to reason by a species of Induction, though not founded on an enlarged experience. But by trying experiments upon all objects which have the appearance of flame, he learns to distinguish such as are hurtful from such as are otherwise, and excluding

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those that are harmless, he arrives at the conclusion, that all such objects of a particular kind are hurtful.

Now, in this statement of the process, it appears to me that two very different instruments are used: the first of which seems to be Analogy, ἀναλογία, a *reasoning upwards* from the known to the unknown, the great instrument of Invention and Generalization, which provides, as it were, subjects for the exercise of Induction; which Induction, ἐπαγωγὴ, seems to be rather the collection and examination of experiments, and the drawing a conclusion from them; and as this conclusion cannot be extended beyond what is warranted by the experiments, the Induction is an Instrument of Proof and Limitation. A person, that has been burnt by a flame, feels certain that he will be burnt again, if he try it; he argues only from *same* to *same*, and is said to be sure of it by *experience;* and it is upon this constant expectation that all physical

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science is *founded.* By *analogy* he argues that all flames will burn him, he argues from *like* to *like*, he generalizes and draws an *inference;* and I conceive it is by this analogical reasoning that all science is *advanced.* The inference which he thus draws *a priori*, is merely an *hypothesis*, ὑπόθεσις, a *supposition*, probable indeed, but far from satisfactory. But when he brings it to the test of induction, and collects experiments, he either confutes or proves this hypothesis, or limits it to something not quite so general.

This analogical reasoning, when it is extended only from individual to individual of the same species, is commonly called *experience*, and not *analogy;* and from the perfect uniformity of nature, perhaps not improperly: thus, we say, we know by *experience* that all stones gravitate to the earth. But when we extend it from species to species of the same genus, it is *analogy*, properly so called. If from the gravitation of all stones we reason to

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that of earths, we reason by analogy, from like to like: we obtain a probable *inference*, not satisfactory till experiment be directed successively to individuals of the different species of earths, and thereby the *inference* converted into a *conclusion*. Having thus included earths as well as stones, we may proceed from one species to another by the same process of analogy and proof, till all bodies upon the surface of the earth be included under the general law of gravitation, whence we may rise to more general propositions. I am inclined to think that such has been the common process of discovery in all ages of the world.

When Sir Isaac Newton, from the fall of an apple, was led to the consideration of the moon's gravity, he is said to have made the discovery by Induction; which is true as far as the proof of it went. But, it is manifest, that, at first, he merely formed a probable hypothesis by Analogy, and then laboriously brought it to the

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test of observation; and it is highly probable that the hypothesis he formed was, that the moon gravitated to the earth with a constant force, instead of a force varying inversely as the square of the distance; which was the result of another hypothesis, suggested by the elliptic orbits of the planets, and the force necessary to confine the motion of a *projectile* in such an orbit.

When Harvey observed the valves in the veins, he is commonly said to have made the discovery of the circulation of the blood by reasoning from *final causes*, or by asking of nature for what purpose such valves could be intended: but, perhaps he might have asked the question for ever, unless the resemblance between the valve of a vein and that of a pump had suggested a plausible hypothesis, in which he was confirmed by repeated experiments and observations directed to the point.

Analogy, so much slighted and over-

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looked, and to which such an inferior part in the advancement of science has been assigned, and that too with so much suspicious caution, appears to me to be the great instrument of generalization and invention, by which hypotheses are supplied, which are most commonly the subjects that call for the exercise of Induction. By Induction, as usually understood, we make it a rule to exclude all hypotheses: first of all, we collect the experiments, and, having obtained these, we are next to examine them and compare them; we then reject the irrelative and negative, and conclude upon the affirmatives that are left. By this means, says Lord Bacon, we question nature, and conclude upon her answers: yet I would venture to suggest, that, ninety-nine times out of a hundred, the Analogy or comparison precedes the collection of the experiments: some resemblance is observed, some hypothesis is started, which is the subject that is brought to

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the test of Induction. By this the hypothesis is either proved, or confuted, or more commonly limited to something less general.

I would not be understood to assert that the common inductive method is barren; for, no doubt, discoveries might be so made; but I really question whether a discovery was ever made according to its rules, which the discoverer had not, in his own mind, anticipated by Analogy as an hypothesis long before he had completed his investigation, and indeed guided his investigation by it. But, however that may be, it must be admitted, that thousands and thousands of discoveries are made and inventions brought into play, the result merely of analogy and a few experiments, or very commonly of a single experimentum crucis. By the common method proposed we take too wide a range, we embrace the whole subject at once, and require the completion of its natural history; but by

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the proper use of analogy as a guide, we step cautiously but from one species to the next.

Induction has two instruments of operation; EXPERIMENT for all things within our reach, and OBSERVATION for such as are beyond us. And of these Observation is less efficient than Experiment; for in all Experiments Observation is involved: but in many investigations Experiment is not attainable, and we are reduced to Observation only, because we cannot use Experiment. Now by Induction *without* Analogy we first ask innumerable irrelative and impertinent questions of nature, and then make use of Observation upon the experiments in hand; but by Induction *with* Analogy we try experiments or observe for a specific purpose, and obtain specific answers to the point.

Having thus obtained a general law or fact, or cause, for an entire *genus*, we may proceed in the same manner from

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this genus to the next, till the whole *order* be included under the same or some more extensive generality: thus at length we may arrive at certain most general laws, or phenomena, or causes; beyond which it may not be within our power to proceed. To arrive inductively at a generality it is of course requisite to have in hand a most extensive collection of the facts or particulars, which must be all included under it: and Aristotle, no less specially than Bacon, insists upon this preliminary. The only question is, whether in reality we do not ascend to an extensive generality by a series of particular conclusions, by successively reducing each fact or individual under some general law, conceived *a priori* by Analogy from some single instance, instead of deciding at once by a formal and comprehensive survey of the whole.

The progress of science in the ascending scale consists in rising from Individuals to Generals and Universals.

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Having established these generals and universals, from them we may extend discovery in what may be termed the DESCENDING SCALE: and here Syllogism, in its common acceptation, has its use. And, as an instrument of invention, Syllogism may in this case supply corollaries; as in the former, Induction might yield discoveries without the help of analogy. Yet a very slight consideration will show, that here also Analogy is the great engine of invention, by which hypotheses or suppositions are supplied; and that in the descending scale Syllogistic Demonstration, as Induction in the ascending, is the grand instrument for confuting, proving, or limiting those hypotheses.

But it is said, that, among the ancients, SYLLOGISM was the great engine of discovery. If we examine this matter, we are informed by Aristotle, that Syllogism is a *discourse* or reasoning, in which, certain things being admitted or supposed,

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something different from these admitted principles or propositions, necessarily follows, in consequence of their existence.* He tells us, likewise, that Demonstration is a species of Syllogism.† Now it is really of no consequence whether a syllogism is composed of two, three, four, or any number of steps; and, indeed, every mathematical demonstration by synthesis is no other than a chain of Syllogism. If we inquire further of him, how the first principles of all philosophy, and every art and science are to be obtained, from which such demonstrations may depend; he expressly informs us by *Induction*,‡ by collecting together all the in-

* Συλλογισμὸς δέ ἐστι λόγος ἐν ᾧ τεθέντων τινῶν, ἕτερόν τι τῶν κειμένων, ἐξ ἀνάγκης συμβαίνει τῷ ταῦτα εἶναι. I. Pr. Anal. 1—Edit. Casaub. 1590. N.B. there is a great variation in the numbering of the chapters in the different editions of Aristotle.

† I. Pr. Anal. 1.

‡ I. Pr. Anal. 30—II. Pr. Anal. 1. 23—I. Post. Anal. 1. 10. 14. 18—I. Top. 7—VIII. Top. 1—VIII. Phys. 4—IV. Meteor. 1.

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dividuals, and drawing the conclusion from them. His logical treatises, indeed, being entirely directed against the sophists of that day, relate solely to syllogistic demonstration. Of course, therefore, he does not investigate the method of obtaining the universals themselves: but he speaks repeatedly of it, that is, of Induction, as the well known and familiar method of obtaining them, through the *senses*, by *experience*.* He clearly explains to us the progress of science, both in the ascending and in the descending scale.† We learn, says he, only by Induction or Demonstration; by Demonstration from universals to particulars, i. e. in the descending scale; by Induction from particulars to universals, or in the ascending scale. Hence a person, who is defective in any of his senses, cannot use Induction, and therefore can-

* I. Pr. Anal. 30—I. Post Anal. 10. 15. 27—II. Post. Anal. 18.

† I. Top. 10—VIII. Top. 1.

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not theorize to universals, or by abstraction obtain general propositions: hence, also, his progress in the scale of demonstration must be equally defective with his data.*

If we turn to Plato, he throws a new light upon the method of investigation, by requiring some previous hypothesis† or idea for examination; and, in the beginning of the Parmenides, lays down the Eleatic or Dialectic method of examining it. The method is this—Either, I., The subject *is*, as it is supposed; or II., it *is not*. On the first supposition that *it is* so, we must examine *what happens*—1st. To *it* with respect to *itself:* 2d. To *it* with respect to all *other things:* 3rd. To all *other things* with respect to *it:* 4th. To all *other things* with respect to

* I. Post. Anal. 15. See also the preceding references.

† Aristotle uses the word thesis for hypothesis in this sense. His dialectic also differs from that of Plato

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themselves. Four similar cases will result when we examine what *does not happen;* and, according to the exposition of Proclus, four more, when we examine what *does, and at the same time does not, happen*. Upon the supposition, therefore, *that it is so*, we must investigate its relations in all their bearings; and we must pursue the same method of investigation upon the second supposition, that *it is not so*. And if, in so doing, we were guided according to certain categories, a more thorough investigation could not possibly be devised: and the method is equally applicable to Experimental philosophy as to Intellectual science.*

The ancients, then, professed, in the ascending scale, to work by Hypothesis and Induction; and, in the descending scale, by Syllogistic Demonstration or Deduction from first principles or propo-

* For a method of starting ideas for examination, see a curious description of Socrates, with his hopeful pupil, in the Clouds of Aristophanes.

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sitions, inductively determined by *experience* upon the evidence of the *senses*. If, then, as it is commonly asserted, the Syllogistic method was held to be their only method of discovery, though I am not aware that such was indeed the case, and the method was a process of reasoning from known to unknown, I conceive that, in this respect, the terms must have a more comprehensive signification than is generally allowed.* I can find nothing, however, to warrant the supposition, that they accurately divided their method into Analogy and Induction in the ascending scale, and into Analogy and Demonstration in the descending scale. They seem to have imagined that by their method they went precisely to the point, and no further, instead of often going

* Some papers, entitled Vindiciæ Antiquæ, in the Classical Journal, throw some light upon these subjects, though I cannot concur with the author of them in his opinions of the perfection of ancient science, much less in his abuse of modern philosophers.

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something beyond it by too extensive a generalization, as we are led by analogy, and then retreating to the point determined by the proof; which is a mistake that has equally prevailed in modern times.

LOGIC or FIRST PHILOSOPHY is the science, to which these subjects belong.

In the CATEGORIES, which the ancients used, they endeavoured to comprise the relations of all things to themselves and to one another. The categories of Aristotle are deficient. Those of Kant are more comprehensive indeed, but are much less applicable to ordinary physical investigations: they are likewise imperfect, and in some respects redundant, and even repetitions of one another. Yet, if due attention were paid to the subject, I believe the categories might without much difficulty be supplied.

DEMONSTRATION is the *concatenation*, the *chain of reasoning* by which a pro-

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position is connected with its principles or data. And not only in the descending, but in the ascending scale, we are frequently under the necessity of calling in logical assistance for bringing our hypotheses to the proof.

MATHEMATICS are a branch of logic, more particularly applicable to the philosophy of matter, inasmuch as Number, Quantity, and Measure, both in Time and Space, are the peculiar subjects of that science. And many physical hypotheses are started, which cannot be examined without a most accurate admeasurement and an extensive knowledge of mathematical science: and the proof or disproof of them can thus only be exhibited. But mathematics are not the only kind of logic employed in philosophical, or even in physical research: and I conceive that Playfair's idea of the subject, in supposing such to be the case, is but partial, and wants something of the generality of the ancients. The connect-

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ing chain, for instance, among the propositions of moral and metaphysical phenomena, is a different species of this same logic; but, number, quantity, and measure, having little to do with those sciences, mathematics must, from their very nature, be almost wholly inapplicable. An undue regard to mathematics has often been productive of very serious inconvenience, and of grievous mischief, when brought to bear upon those sciences: and, sometimes, even in physical pursuits much misconception has resulted. A mathematician can rise no higher than his data; and, eminently useful as his science is, not only in the descending scale, but in the examination of hypotheses, it is not within its compass to prove any *simple* physical proposition or first principle. All the mathematical proofs of the parallelogram of forces, for instance, are vicious, and merely arguments in a circle. Like all other sciences, Mathematic must depend upon

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its own first principles: and its axioms are only general propositions raised upon individual, by induction. We know that things equal to the same are equal to one another. It is no innate scrap of knowledge; nor need we have recourse, with Plato, to a pre-existing state in which we learnt it. We know it only inductively from observation of the particulars, and it is absurd to suppose, that, in the demonstration of any proposition, we admit the *particular* by virtue of the *axiom*.

The origin of THE UNIVERSAL AND NEVER-FAILING EXPECTATION, that the same or similar causes will always be attended with the same or similar effects, an expectation upon which all physical science is founded, has been a subject of the ablest controversy. Hume denies it to be the result either of Experience or of Reason. 'It is not the result of Experience,' says he, 'for Experience is only of the *past*, and cannot pos-

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sibly extend to the *future*. If it be the result of Reasoning, produce the chain of Reasoning, which connects the two following propositions with one another; *I have found that such an object has always been attended with such an effect;* —(therefore) *I foresee that other objects, which are in appearance similar, will be attended with similar effects.* If there be any chain of reasoning between them, it is evidently not of the *demonstrative* kind; because the converse is equally conceivable. It is therefore of the *probable* or *moral* kind. Now all probable reasoning relates only to *matter of fact* or *real existences*. And all arguments concerning existence are founded on the relation of *Cause and Effect*. Our knowledge of that relation is derived entirely from *Experience*. And all Experimental conclusions proceed on the supposition, that the future will be conformable to the past. To endeavour therefore the proof of this last supposition by pro-

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bable arguments, or arguments regarding existence, must be evidently going in a circle, and taking that for granted, which is the very point in question.'

Such is the difficulty, respecting the very foundations of our knowledge, which is proposed by Hume. He attempts to solve it by attributing the Expectation to mere *Custom* or *Habit*, which he conceives may be ultimately referred to some instinct, or *mechanical* tendency. Reid, as usual, has recourse to an innate sense, instinct, or principle of our nature: and Brown appears to acquiesce in the same solution.

The principles of connexion among our ideas, according to Hume, are *Resemblance, Contiguity* in time and place, and *Cause and Effect*. They have been more justly stated as *Resemblance, Contiguity* in time and place, under which the relation of Cause and Effect may be reduced, and *Contrast*. The ideas of men flow in trains of thought, connected by

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some one or other of these three primary principles. Now, in the argument of Hume, a fallacy seems to lurk under the proposition, that 'all *probable* or *moral* reasoning relates only to matter of fact, or real existence, and is therefore founded upon experience.' The first time a triangle, suppose an equilateral triangle, was presented to us, we had no conception of its properties. By attentive consideration we might *demonstratively* acquire the knowledge, that the sum of its angles is equal to two right angles. Now if another triangle, nearly similar, suppose an isosceles triangle, were presented to us; if we took it into consideration, I conceive, that, from our knowledge of the properties of the other, we should *a priori* suppose or infer, as an hypothesis, of this triangle also, that the sum of its angles was equal to two right angles: and such an inference would have nothing whatever to do with Cause and Effect, and the truth, from which it is

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inferred, was not obtained by *Experience*,* but by *Demonstration*. In like manner, if a Circle were first presented to us, and then an Ellipse, we should, probably, before we paid much attention to the peculiarities of the ellipse, infer that its properties were the same with, or similar to, the properties of the circle: or, if our genius were of that turn, which is more taken with Contrast than with Resemblance, we might infer the contrary: and in either case an hypothesis would be inferred, and probable reasoning introduced. With respect to the triangle, our inference or hypothesis would be correct, and might be proved by *demonstration*. With respect to the ellipse,

* We might, perhaps, say, 'Knowing the properties of the equilateral triangle by *experience*, we infer, &c.' But it is only the ambiguity in the word experience, that requires to be exposed. The truth was not obtained by Experience, neither is the inference drawn by Experience, in the sense in which Hume uses that word.

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our inference would be incorrect, and might be refuted by *demonstration*. These arguments *a priori* are analogical, and only probable, and by them the hypothesis is inferred directly, without need of any other intermediate chain of reasoning. They have no reference to matters of fact, or real existences; nor are they founded upon the relation of cause and effect, nor do they depend upon experience. It is not true, then, that all probable or moral reasoning depends upon experience.

Again, if a cause should be presented to our notice as about to operate, with which, hitherto, we had been utterly unacquainted; it is universally admitted, that we should not have the slightest conception of what would be its effect. And, if all the possible effects were set before us, we should be equally at a loss to guess which of them would result. But if the same cause were a second time presented to our notice as about to operate; and if,

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having observed its result in the former instance, we were again to consider what its effect would probably be, this second time; we should lie under the same complete ignorance as before, with one exception, that is to say, the effect which was its former result: and with this exception, we could have as little hope of guessing* as we had at first. The only well founded expectation, then, that could possibly arise, that is, the only plausible

* The doctrine of Chances applied to Moral, and Metaphysical, and even to Physical reasoning, has been driven to such a length by some of the ablest Mathematicians, and so thoroughly abused, that I am afraid it needs some apology for introducing it; especially as it commonly involves within itself a glaring fallacy, and is, as Euler observes of the *Sufficient Reason* of Leibnitz, only a very ingenious method of setting up our ignorance as an instrument to ascertain, and a standard to judge of truth. In the above argument, however, I *hope* I have drawn the true conclusion; yet upon the doctrine of Chances only, I scarcely see any *sufficient reason* why the *chance* is not infinite to one against the same result following the same cause twice alike.

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hypothesis we *could* frame, would be 'that the same cause would be attended with the same effect.' So far it would only be an hypothesis for examination: every successive trial would confirm us in our belief; and when upon an induction coextensive with our knowledge, we met with no single exception, we should justly *learn* to regard it as a general law; liable nevertheless to be limited by any future exception, which might thereafter be produced. I see no necessity to produce a chain of reasoning to account for the primary supposition, or for any supposition whatsoever. As, in *demonstration*, we *intuitively* perceive the relation of equality, so, in *probable reasoning*, we *intuitively* perceive the relation of resemblance. And if, in establishing the first principles of demonstrative reasoning, we infer that the properties of things equal, are equal or the very same; so in probable reasoning we infer that the properties of things similar are similar.

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And, in both cases, these inferences are established or refuted by Induction. The first step in each proceeding is an hypothesis, inferred by analogy from a preceding truth or fact. In the first set of examples, I have taken, it is confirmed by Demonstration, from principles admitted or gathered inductively by intuitive *Observation:* and in the second, it is gradually strengthened by *Experience.* What is common in the foundations of the two different cases, is not the relation of *Cause and Effect*, which is confined solely to the last, but it is *Resemblance.* The general law, whose foundations are disputed by Hume, seems to be established precisely in the same manner as is every piece of knowledge we acquire.

The error of Hume, then, appears to me to spring from a contracted view of the subject; in supposing that all probable or moral reasoning is founded upon one single relation, that is to say, upon Cause and Effect, which, so far from being

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of a general nature, is itself, in this respect, comprehended as a species of *Contiguity;* whereas he should have extended his view, so as to have embraced all the three primary principles which, as it were, connect and regulate our trains of thought: upon the relations of every one of which, I conceive, that, probable reasonings and analogical* arguments are continually based.

ANALOGY can hardly be called Resemblance or any species of Resemblance as it is ranked by Brown; but it is a kind of argument, a probable argument founded chiefly upon that relation. And it is also manifest, that the very

* As the word Analogy is not necessarily, though it is commonly and even anciently, connected with Resemblance alone, I see no reason why a probable argument, founded upon either of the other relations of Contiguity and Contrast, should not be termed *Analogical*, especially as all the three principles are probably reducible to one and the same, viz. that of Contiguity.

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common restriction of the word *hypothesis*, to imaginary *causes* only, is incorrect, and springs from the same error which would confine probable or moral reasoning to the relations of Causation.

The great ABUSE OF ANALOGY is resting in its hypotheses, without bringing them to the test, building systems upon such hypotheses, and bending the facts to their support. Of this, the Timæus of Plato exhibits a curious example. He professes in that discourse to philosophize by λόγοι εἰκότες, which may be translated analogical reasonings, alone: and this dialogue, no less than many of the physical treatises of Aristotle, is a proof how little the ancients were in the habit of attending to the excellent rules of investigation, which they had themselves laid down.

An ascertained fact, or law, or cause, is like a centre or a stem, from which many hypotheses branch forth on all

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sides, varying according to the different resemblances, which the different objects or genera bear to one another. One only of these hypotheses can be the truth: but each of them, if assumed, becomes another centre or stem, from which as many more hypotheses proceed: and such is the case ad infinitum. The chances of error, therefore, increase in a very high geometrical proportion, whose ratio of course must be indefinitely variable, so as to include all the possibilities. A single hypothetical step into the regions of discovery we may, *probably*, make aright, but it is not to be depended upon, till it is proved: and the chances are very much against it. Nevertheless, we may, *possibly*, even make a second step into these unknown regions without proving the first: but the chances against it are prodigiously multiplied. And any attempt at a second step, before the first is proved, is a false method of proceeding. It is like false heraldry,

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laying colour upon colour. The colour can only be blazoned on a metal, nor ought an hypothesis to be laid but upon the sterling basis of a truth. When we make a step into these regions of imagination, a new field is opened to us, presenting us with explanations of phenomena and objects of attention, which we had never before conceived, each inviting us to make another step; and so delighted are we with the wide and fair prospects before us, that we are apt to forget that we are but in the fields of imagination, and that it signifies but little, which hypothesis we had assumed, which path we followed, as all of them open to us prospects as delightful, as they are visionary. It is a fault and an abuse, almost equally to be imputed to modern as to ancient philosophers.

Another abuse of Analogy is arguing from individuals to genera, or from *genus* to *genus*, when these genera are too remote; which is skipping to *generalities*

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instead of cautiously proceeding from *species* to *species:* not that it is of very material consequence, save only, that, the difficulty of the proof being increased, an hypothesis, so obtained, is apt to be received upon insufficient grounds.

But the most dangerous abuse of all is arguing from Matter to Mind, of which, as well as of the kind of similarity that exists between them, I shall have occasion presently to speak more at large.

I would observe, also, the great laxity in the significations of the word THEORY. It is sometimes used for a general law or principle obtained by Induction, and as something almost synonymous with hypothesis: in this view it might be looked upon as a proved hypothesis. In its other and more general signification it implies the whole system or chain of reasoning from general laws and principles, and sometimes the result of such

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a chain. Its real signification seems to be the Survey itself.* In the descending scale the result of the survey is termed a Theorem, θεώρημα: and in the ascending scale the general law obtained, the result of the survey, might perhaps likewise be termed a Theorem: whilst the Theory, θεωρία, the Survey itself, may be taken for the whole system or chain, which, as it proceeds, every now and then, as it were, deposits these theorems.

An HYPOTHETICAL SYSTEM differs from a Theory, as does an hypothesis from a general law or fact; and is dependant upon Hypotheses instead of Facts; and its productions are of the same description. But it must be remarked, that the productions of such systems, that is to say, *Hypotheses deduced*, are, of all other hypotheses, the most susceptible of error; inasmuch as they embody all the hypothetical un-

* See an excellent paper upon the subject in Blackwood's Magazine, August, 1830.

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certainty of the data in one single conclusion, independently of the chances of error in their deduction.

The more extensively a legitimate Theory is unfolded, the greater is its approximation to the truth. The more extensively an Hypothetic System is deduced, the greater are its deviations. And one of the easiest and most forcible methods of proving the accuracy of a system, is, unflinchingly to drive it home.

From one or more general laws or data we deduce certain results or theorems, such as the different expressions for the range, velocity, &c. of a shot, in the theory of Projectiles; and each of these expressions would be *practically*, as well as *theoretically* true, but for the innumerable other circumstances to be taken into consideration. It is therefore only an approximation to practical truth. From a certain other set of general laws we deduce a theory of Resistances; and,

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by a combination of these two Theories, we approximate still nearer to practical truth in all the theorems which they contain. And by adding theory to theory, relative to the powder, form, texture, elasticity, &c. of the shot, climate, and a variety of other circumstances, we might still nearer approximate. And all these Theories taken together might be termed the Theory of Gunnery; and by uniting these approximations with practical experience, a sufficient degree of certainty is attained.

But it is utterly impossible, upon the surface of this earth, by Theory, to arrive at practical results, even in the most simple and advanced of all practical sciences, Mechanics; particularly, as it sometimes happens, when the results of each Theory, instead of being Theorems, are themselves merely approximations. Of this the ancients were perfectly aware; for, both in ascending and descending, they excluded the individuals,

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as objects of sense and not of science. And all men of experience seem to be equally aware of it. For, however accurately contrived, and well considered, any proposed combination may have been, they never expect it to be carried into execution off hand. Every *new* step must be *actually tried*, before the engineer can be confident of success. Something or other, either in the theory itself, in the materials employed, in the workmen, in the weather, and a variety of other circumstances, is sure to arise at almost every turn, which has been overlooked, or unprovided for. And such unexpected obstacles very often prove insuperable; and would do so more frequently, but for the talent and patient perseverance, which is enabled by new applications, experiments, and inventions, successively to overcome such repeated disappointments. I have myself so frequently witnessed this, in attempts to reduce to practice some of the

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most admirable combinations for the advancement of the arts, that in every general estimate I should be inclined to allow no inconsiderable sum at each new introduction for unforeseen contingencies, and to calculate upon the failure and readjustment of at least one half the combination before it can be reduced to practice.

Much less, then, is it possible to reduce Theory to practice in Politics, or any other moral or intellectual science; where not only so few general laws, universals, or data, are ascertained, but the springs of action are so manifold and various, independently of the free-will and perversity of the individuals, that human intellect can scarcely hope to form even a likely approximation to the details. The speculative philosopher, as is justly observed by Stewart, possesses a fund of knowledge, invaluable in all untried cases, which will guide him a certain way in approximation to

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the truth. But if he attempt to reduce such theoretical principles *immediately* to practice, of course he fails in every instance, and produces nothing but confusion and mischief; of which the state of this kingdom, at this moment, is a most lamentable proof: and the probable result of persevering in such a course cannot be contemplated without the utmost alarm, the more anxiously, as many of the systems, still acted upon, are built upon false principles, and are merely hypothetic systems.

It is common in all philosophical treatises, to say something upon a general abandonment of PREJUDICES; and to assert that we should begin our researches, unswayed by any of the Idols, which have unquestionably retarded the advancement of science But what are Prejudices? Prejudices are presumed to be deeply rooted *opinions*, taken up on trust without sufficient proof. In-

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numerable are the *opinions*, which we must necessarily and for ever hold without any proof at all, and upon very slight analogies. And what are Inferences drawn a priori by Analogy but unproved opinions? And if such Inferences or Hypotheses are, as I have endeavoured to point out, the first steps to knowledge, it appears to me to be a false conclusion, that because they have been *abused*, they ought therefore without examination, to be *abandoned*. Prejudices differ from such inferences and opinions, only in *degree*, the degree of strength.* If, then, slight opinions and inferences, founded but on a single analogy, are to be examined, and not abandoned, it appears to follow *a fortiori* that such deep-rooted

* Prejudices are often confounded with the evil passions by which they are accompanied and fostered. In such instances it is the passion that should be eradicated; and the mere opinion, if it has no other support than the passion, will quickly vanish.

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opinions, as prejudices are commonly represented to be, so far from being flippantly laid aside, are worthy of an investigation, still more attentive and minute.

Prejudices, which have obtained a general ascendancy, must either have been originally founded upon some strong analogical reasonings; or have been the conception of some master-spirit of a by-gone age, so brilliant, as, at the time, to have commanded universal assent; or, having been struck out in the ordinary course of analogical inquiry, they must have been corrected by succeeding hands, till they obtained a place among the standard opinions of the world. Very often, from the increase of knowledge, we find upon examination that these prejudices are mistakes: but the very mistakes of a man of genius are valuable, and deserve all due consideration. But for the paradoxical errors of Hume, we should possibly not even yet have thought

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of investigating the phenomena of causation. The attempts of Reid to refute these paradoxes, or rather to evade their conclusions, conferred a lasting benefit on science, not so much by the success of his attempt, as by his erroneous multiplication of the senses, faculties, and powers, of the human mind. And, however mistaken in his views upon the subject, they have been the occasion of far more accurate investigations and analyses.

The attempt to make the mind a mere *tabula rasa*, must surely be as injudicious as it is impracticable. If it were in our power to shake off our opinions, and we attempted to supply their places by our own individual research, it would take us almost the labour of a life to master the far from contemptible acquirements of a naked Indian. If we had recourse to men or books, with the first information we received, we should receive another set of opinions, if not for belief,

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at least for examination: and we might busy ourselves in examining the mere opinions of some single philosopher, instead of the standard opinions of the world; having abandoned, in the mean time, all practical principles of conduct. Three times at least in four, a philosopher is wrong in any novel speculation, even where he flatters himself he is proceeding upon the strictest induction: and his suggestions only become practicable and useful, by being corrected or continued by the repeated improvements of his successors: after which, if they be of such a nature as to be incapable of proof, they are received among the professed opinions and prejudices of the world, to be examined thereafter, by any succeeding philosopher, and sifted to his heart's content, to be improved, established, or overthrown, as the case may happen, but not to be wilfully abandoned. "Instead of casting away all our old prejudices," says one of the ablest,

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and the most prophetic of politicians, that ever instructed mankind, "we cherish them to a very considerable degree; and, to take more shame to ourselves, we cherish them because they are prejudices; and the longer they have lasted, and the more generally they have prevailed, the more we cherish them. We are afraid to put men to live and trade, each on his own private stock of reason; because we suspect, that this stock in each man is small, and that the individuals would do better to avail themselves of the general bank and capital of nations and of ages."* Though the foregoing extract may be a little in the extreme, yet every practical politician must be sensible how much more productive of human happiness is a steady adherence to ancient prejudice than a general adoption of new-fangled theories. The first are practicable, if they are false; they produce

* Burke's Reflections, p. 129.

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no irremediable mischiefs; and when their falsehood is detected, they are gradually mended and superseded; but the latter are very generally impracticable, if they are true. And the statesman, that should attempt to reduce to practice, the novel speculations of a single brain or school, would prove himself a man, but very partially acquainted with the springs of human action, and of such contracted views, as we have not been in the habit of expecting from the statesmen of this enlightened age.

Men, who pride themselves upon a superiority to all prejudices, are generally found shallow in their acquirements, sceptical to demonstrated truth, and in a remarkable degree credulous, and apt to take upon trust some favourite novelty or other, that intrinsically is scarcely worth a moment's consideration. Nevertheless all have their use: and the flippant sophist often renders service to science, by drawing the attention of men,

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more able than himself, to the examination of established prejudices, and the result most commonly is, as Burke justly observes, that they are reestablished upon a firmer basis, their ancient foundations, which had been concealed, are openly tried, and their soundness publicly declared. When, however, the reverse is the result, a service even more valuable is rendered to truth by their exposure. But, unfortunately, it too frequently happens, that the whole is for a time discarded, its truths rejected with its errors, till future examination partially recalls the opinion, and reestablishes its truths alone. In the philosophical world of the present day it is a strong and deep-rooted prejudice, that all prejudices ought to be abandoned. But if this prejudice were itself abandoned with examination, we might rush into the opposite extreme, and incalculable might be the mischiefs that would result. As a nearer approximation to the truth,

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than was the system, which was in use before the time of Bacon, this prejudice has rendered essential service to science, and to mankind. But from the time of Burke to the present its errors have been more acted upon than its truths; and it has become mischievous. With respect to prejudices, then, it appears that they are not to be abandoned without examination; but rather to be retained till they are overthrown; that they are to be subjected to the strictest scrutiny and investigation, and that *cæteris paribus* the leaning should be decidedly in their favour and support.

Lord Bacon has made the general abandonment of prejudices the active principle of curiosity in his method of investigation, and the exclusion of hypotheses the clog and safeguard. It might be recommended to consideration, whether a process, directly the reverse of this, could not be acted upon, not only

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more naturally, but with greater facility and greater safety; whether the ardour of inventive genius, instead of being at once damped by the rejection of its speculations without examination as wild hypotheses, should not be encouraged to pour forth the brilliancy of its conceptions;* and whether a sterner and a safer check might not be placed upon its flights, by Prejudice, rigidly insisting upon proof of every novelty proposed. The former method is evidently a strain

* It was amusing, upon a late occasion, to hear the reverse of this proposition driven home by a demonstration, "that Genius was rather detrimental than otherwise."—Some men are more apt to discover, invent, and generalize, their minds being of that kind, which is more taken with Resemblance; and such men are geniuses of the highest order. Others, being more observant of Differences than Resemblances, are better able to examine any subject or hypothesis proposed. Both are equally wanted for the prosecution of science; but the present system almost amounts to an exclusion of the former.—See, in many of the dialogues of Plato, his curious speculations upon *The Same* and *The Different*, *The Similar* and *The Dissimilar*.

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and a task upon the mind, both with respect to the check and the incitement; but the latter falls in with the natural inclinations of all men.

Thus far I have spoken of the *Method* of proceeding. It is a method universally applicable to every inquiry; inasmuch as it is perfectly independent of every science, and is merely an exposition of the Laws, or manner, in which the mind pursues the objects of its inquiry. And I have used the terms Laws, Facts, Universals, and the rest, in their common acceptation. But these terms are so confounded with each other, and with Causes and Effects, Power, Agent, and the like, that we scarcely know what we are in search of; and some of the most able views of Bacon's Novum Organum have become as much lost to the world, as have some of the very finest speculations of the ancients. In examining the proper *Objects* or *Aim* of science,

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I would endeavour to point out, as they arise, the distinctions, which, for the sake of perspicuity, so necessary to the cultivation of science, ought ever to be maintained among them.

Our knowledge, both of the mental and of the material worlds, relates to the *Substances* which compose those worlds, either in respect of their *Qualities* as they *coexist*, or of their *successive Changes*.

The *Qualities* of matter *coexist* in *Space;* and all its *Changes* are but the *successive motions* which occur in *Time*. But the coexisting and complex phenomena of mind, and the successive changes, of which it is the subject, notwithstanding these strong analogies are wholly independent of *Space*, and *Motion*, and probably of *Time*.*

* That they are wholly independent of Space and Motion, few but the Materialists dispute: that they are independent of Time is not so universally allowed. Such an opinion, however, is most ably maintained.

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Now if we could become acquainted with every *Object* as it exists in *Space;* and if we could intimately perceive its conformation, and the circumstances on which its qualities depend; and if we arranged them all into classes, according to the *Resemblances*, which they exhibit, and then described them, giving names both to the individuals and to the classes, we should have completed one great branch of *Natural History*. And this single branch is not unfrequently regarded as the whole of that science. But there is another great branch, equally the object of classification and description, that is, the *Changes* which occur in *Time*. And the forces, actions, passions, and accidents of bodies, the phenomena of Attraction, Galvanism, &c., so far as they are the subject of classification and description only, are no less to be ranked as the objects of Natural History, than are the Qualities and the Individuals themselves.

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Natural History then is the classification and description of the *substances*, of their *coexisting qualities*, and of their *successive changes*.

Struck with the resemblances to each other, which the Individuals exhibit, we have arranged them naturally into Species. By a comparison of the species Genera are formed: and again Orders, Classes, and Kingdoms in the ascending scale. Or if we pursue the classification in the descending scale, an order becomes divided into genera, by observing the *Resemblances*, which prevail among the various groups, and the *specific Differences* by which they are distinguished. Thus, Trees may be divided into Oaks, Elms, Ash, &c. resembling each other in their general features, but distinguished by certain differences. Oaks, again, are divided into the different species of Oak, till at last we arrive at the individuals themselves. In the same manner we group the phenomena of change or action, as Attractions

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into Electric, Magnetic, Elective, &c. of Gravitation, of Cohesion, &c.

Each class is distinguishable by its definition consisting of the *genus* and of the *specific difference*. As science advances new and unlooked for resemblances and differences are observed: and the great instrument of Classification is RESEMBLANCE.

But does Philosophical Inquiry extend only to this knowledge of Natural History? And if we ask *why* such a phenomenon occurs; will our curiosity be satisfied with this classification and description only? Often, very generally indeed, we are directly answered in the affirmative; and are told by modern philosophers that such inquiries into the causes of things are either beside the objects of true Philosophy, or are beyond our limited faculties to determine; and that we must content ourselves with the laws only, or with the resolution

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of all particular phenomena into those of a more general nature. "If it be asked," says Dr. Reid, "*why* such a body gravitates towards the earth? all the answer that can be given, is, Because all bodies gravitate towards the earth. This is resolving a particular phenomenon into a general one. If it should be again asked, why do all bodies gravitate towards the earth? we can give no other solution of this phenomenon, but that all bodies whatsoever gravitate towards each other. This is resolving a general phenomenon into a more general one. If it should be asked, why all bodies gravitate to one another? we cannot tell: and if we could tell, it would only be by resolving this universal gravitation of bodies into some other phenomenon still more general, and of which the gravitation of all bodies is a particular instance. The most general phenomena we can reach, are what we call the *laws of nature*. So that the

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laws of nature are nothing else but the most general facts relating to the operations of nature, which include a great many particular facts under them."*

On this very common system of philosophizing, a person, making the Inquiry proposed, receives no other than this most unsatisfactory reply—'That *the body gravitates, because it* (in common with every other body) *gravitates.*' It may be true that we are ignorant of any reason; nevertheless the question is not to be evaded. The inquiry is directed to the Cause; and the answer of Dr. Reid is a reply from Natural History to a question upon Causation. And it is one of the most common errors of the philosophy of the present day to confound the second great branch of natural history with causation. Causation, however, is a distinct, and strict object of philosophical inquiry: and, so far from being dismissed as beyond us, it is of

* Inq. p. 278.

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more importance both in a scientific and in a practical point of view, than is natural history itself. Both involve considerations of individuals and phenomena in space and time. Natural history is the classification and description of the individuals, phenomena, or facts themselves: Causation is the investigation of the Causes *which* produce these phenomena, of the manner *in which* they are produced, and the purposes *for which* they are produced. The two sciences go hand in hand. By the extension of Natural History, the knowledge of Causation is advanced: nor is Natural History less indebted to Causation, which is continually bringing to light new properties, and phenomena, and unlooked for circumstances, which point out unheeded similarities and differences, among objects and events; and thus corrects and extends the classifications which had hitherto prevailed.

It is most true, that the subject of

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Causation is involved in great obscurity. But I conceive, that this arises chiefly from a confusion of words: and, that by the introduction and improper use of certain terms, and too great a reliance upon certain favourite but unproved hypotheses, we have in some measure lost sight of the proper objects of Philosophy.

By the word Cause the ancients appear to have understood *that* without the co-operation of which no sensible phenomenon could be produced:* and they divided Causes into the Material, the Formal, the Efficient, and the Final. And this division was excellent, and in perfect keeping with a system, which held

* See the 67th epistle of Seneca, wherein he explains the common and Platonic division of causes; and unjustly arraigns both, because he conceives that Space, Time, and Motion, ought to be included. Motion, however, was always especially included in the efficient cause, and Space and Time are but the measures of that motion. The objections of Reid to this division are equally inconclusive.

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a Soul of the world as a prime mover of Efficient causes, to which every action in the universe was remotely to be referred in a connected chain.* Aristotle is almost inclined, yet hesitates, to claim this division as his own discovery: but it is evidently of a much more ancient standing. He gathers it however by an extensive Induction, and by the resolution of the assumed or proposed causes of all preceding philosophers into those which he enumerates. And Lord Bacon, though he denies to the ancients the knowledge of Induction, must have been satisfied with the Induction of Aristotle in this respect, or from his own researches and examination have arrived at the same conclusion, before he admitted this division of Causes, with such unqualified approbation as he does. There is nevertheless a slight variance between the two, in words, rather than in substance, owing to Bacon's deviation, from the ancient

* See Arist. VII. Phys. 1.—VIII. Phys. 5.

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language, which is however immaterial to our present investigation.

Among the successors of Lord Bacon, this division of Causes appears to have been but little attended to or understood, and has been generally supposed to be superseded: and, since the time of Hume, by the word Cause they seem at times to understand some *Tye* or *Bond of Connexion* between one event and its preceding: and in this view it is asserted, that no causes of things have ever been discovered; and that philosophy lies not in the discovery of causes, but only in the discovery of the facts and general laws of nature. The same assertion is likewise made, because no one can pretend to have discovered the first of secondary causes. Sometimes the Cause is looked upon as implying nothing more than an *antecedent phenomenon:* and these phenomena, under the names of Cause and Effect, are supposed to be continued in an endless chain of succes-

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sive conjunctions. Brown is of this opinion, and he gives the following as a summary of his doctrine of Causation.—"To express shortly what appears to me to be the only intelligible meaning of the three most important words in Physics; Immediate invariable *antecedence* is *Power*.

The immediate invariable *antecedent*, in any sequence, is *Cause*.

The immediate invariable *consequent*, in any sequence, is the correlative *effect*."* And again.—"The *form* of bodies is the relation of their elements to each other in *space*. The *power* of bodies is their relation to each other in *time;* and both Form and Power, if considered separately from the number of elementary corpuscles and the changes that arise successively, are equally abstractions of the mind and nothing more."

Before we examine any instances of

* 7 Br. 38.

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the phenomena, let us dismiss the Final Cause, that is, the ultimate object and end of every action, without further consideration, as less properly a cause than a motive, and equally admitted in all systems, in which nothing is referred to chance, and as unconnected with the *Physical* subject we have now in hand.

To take, then, an example: when we hear a clock strike, if we attend to the chains of successive causes—to go no farther back—they may be traced in the stroke of the hammer, which causes the vibration of the bell, which causes the undulatory movement among the particles of the air, which causes some kind of motion on the organs of hearing and on the brain; a certain *sensation* follows, and the soul *perceives* that the clock has struck. Now, for the production of this ultimate effect, we may observe not only one, but three distinct chains of what the ancients would call Causes. 1st. The chain of the *material substances*,

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whose matter is in contact with one another, and without which matter the phenomenon could not have been produced, viz. the matter of the hammer, of the bell, of the air, of the auditorial nerve, of the sensorium, and these are the coexisting *Material causes*. Again, each of these portions of matter is endued with certain *qualities*, without which also the effect could not have been produced: and these depend upon what the ancients would call the *form;* and they consist of the form, texture, elasticity, vibratory and other qualities of the bell, of the air, nerve, &c. These are the *Formal causes*. To these must be superadded the particular *accidents* by which they are affected, viz. the fall of the hammer, the vibration of the bell, and the others, by which motion is successively communicated: and of this chain of causes each accident, action, or phenomenon, is nothing else than *motion*, modified by the body through which it passes, and may

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be regarded as a proximate *Efficient cause.**

Let us take another example of a *statical* instead of a *dynamical* nature—If we squeeze a piece of wood in a vice, and have so far squeezed it as to be able to produce no further compression, but nevertheless continue to apply the same force, so that the whole remains in equilibrio, we may here again trace the material and formal causes, in the hand, the lever, the screw, and the limb of

* It might be objected, that the common example of the ancient causes, viz. of a founder casting a statue, does not quadrate with what I have advanced: for in the example, the Efficient cause *a quo* is the Founder, the Material *ex quo* is the brass, the Formal *in quo* is the shape. A more attentive consideration, however, will show that it is only a particular case of the more general that I have taken, as is explained at large by Aristotle (II. Phys. 3.). The Platonists added to the above the Ideal or Exemplary cause, *ad quod*, according to which it is fashioned, which commonly related rather to the metaphysical, than to the physical forms.

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the vice; its fulcrum and other parts concurring. And the chain of action, accident, or force, is a continued strain, endeavour, or tendency, propagated from the hand through the parts of the vice, communicating the pressure to the wood: and it may be traced still further if requisite.

Here then we must mark a distinction among Forces or Powers. Where Motion is actually produced, the force by which it is produced, proximately, is nothing more than the Momentum or Quantity of Motion communicated from one body to another in a connected succession, as in the example of the Bell. Such force is called *Dynamical*. *Statical* force is of the same nature, though no motion is produced, the force being counteracted in its effect, as in the example of the Vice. It produces, however, a continual Stress or Endeavour; and is the cause of a continued series of such Stresses, Endeavours, and Ten-

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dencies among bodies in contact: and it is only requisite that some impediment be removed that motion may take effect.

In the phenomena, then, above referred to, and indeed in every other with which we are *thoroughly* acquainted, we may trace the Material, Formal, and Efficient or Physical causes of the ancients, a *Chain of Being* coexisting *in Space*, and a *Chain of Action*, Accident, or Force, successive *in Time*: all which are necessary for the production of the Effect. And we may perceive that the ancient and modern doctrines upon the subject of Causation, so far as both of them maintain the connected chain, are not inconsistent with one another: but we must carefully distinguish a circumstance, which is in general wholly overlooked, that is to say, whether the Cause be defined as the *Action* itself, or the *Instrument* affected with the action—the Vibration of the bell, or the Bell in the act of vibrating;—the Strain propa-

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gated through the lever, or the Lever itself in the act of straining upon the screw.

I am sorry to differ, upon the subject of causation, with a writer so justly celebrated as Brown. But there seems to be a remarkable vagueness and obscurity* in many of his definitions and explanations relative to the words Power,

* I have given above what appears to me to be Brown's system, as he intended to be understood: but according to different passages, which might be culled, Cause is sometimes a *substance*, an *event*, a *relation*, an *invariable antecedent*, whilst he likewise uses the word Power, as an *object* or *substance in the concrete*, as *antecedence in the abstract*, as a *relation*, as an *event*, as the *priority* of two events. Reid had objected to Hume, that, upon his doctrine of Causation, Day would be the cause of Night, and Night of Day. Brown very needlessly endeavours to assist Hume out of this consequence, while he passes it over as an objection to his own doctrine, to which it appears to me to be much more formidable; as is likewise the whole class of phenomena, in which the same combined set of causes produce alternating effects, such as Vibrations, &c. for they come directly under his definition.

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Cause, and Effect. Strange results might be deduced from his doctrines, were we to drive them home, with reference not only to the coexistence of one body with another, but to the continued successive existence of the same body with itself. And again, Time and Space may be abstractions of the mind: and I am inclined to think that such is the case; so is Form *in the abstract:* but the Dynamical and Statical forces, mentioned in the two examples above, are very different from mere *antecedence*, or any abstraction of the mind: and they are Powers in the concrete and in reality, as well as causes. But, by the doctrine of Brown, who follows Hume in this respect, we are either led to exclude all Power, as a reality, from the universe, or to confound it with cause in general.

Again, if we wish to know the cause of roughness, either as a Quality or as a Sensation, where are we to look? Like all continued stresses it is a coexisting

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cause in *time*, though it may be preceding in *order*. It is a formal cause, and all formal causes are excluded from this system of mere antecedence in time. In truth the definitions are too limited; and we have no right to restrict the meaning of a common word to any philosophical hypothesis which we may entertain: but we must accommodate our definitions to the common usage of mankind, unless we can refute the notions, upon which that usage proceeds.

Thus far we have examined in its *outline* only the subject of causation. But, in the examples we have produced, there is another subject of examination, in that *Bond of connexion*, which has been so great a stumbling-block among the moderns. When we come more narrowly to inspect this triplicated chain of Causes, between many of the links there is a joint, if I may so call it: for instance, the *aggregate* motion of the hammer is, in the bell, converted into *atomic* mo-

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tion. Now this cannot be performed simultaneously, though the manner or *law*, according to which it is performed, escapes the observation of our senses. If ever the Bell itself was regarded by Philosophers, as it is among the vulgar, as the proximate cause of sound; and the intermediate air was unnoticed and unknown, as necessary for the production of that effect; the hammer, the bell, and the ear, alone, would have been considered as the coexisting links in the chain of Causation: whilst the air and its vibrations might have been classed among those obscure phenomena, which were evidently necessary for the completion of the chain; but which the researches of science had not then enabled them to ascertain. In most instances these phenomena, which intervene as joints between the links of the chain, may be resolved into the same triplicated chain of causes, as the advancement of science every day demon-

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strates; and nothing mysterious intervenes. The *Latens Processus*, or the latent process, which Bacon is so anxious to have investigated, refers to such a chain of intervening actions: and it is often noticed by the ancients, particularly by Plato in the Parmenides and Phædo; and was one of the leading doctrines of Leucippus, Democritus, and all the Atomists. The *Latens Schematismus* of Bacon, the latent form or structure, upon which the properties of bodies are supposed to depend, refers merely to their qualities, whether formal or derived from Force and Motion: though, perhaps, more accurately, the former should be referred to the Latens Schematismus; and the latter to the Latens Processus. And as the grosser bodies are said to be incapable of contact, a Latens Materia, a Latens Schematismus, and a Latens Processus, at every joint in the chain, become objects of inquiry. The inquiry into the *efficient cause*, the *matter*, the

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latent process, and the *latent structure*, constitutes Physics, according to the notions of Bacon; which differs but little from the ancient doctrine.

But there is a still more curious subject yet remaining, a kind of Latens Processus, the examination of which will throw light upon a controversy, which has been as keenly agitated, as any, that has ever attracted the attention of Philosophers. At some of these joints in the chains a most remarkable phenomenon presents itself, the introduction of an extraordinary external force. If we strike a flint and a steel together, a spark is the result. This spark falls upon a charge of powder. An explosion ensues, in which thousands of such sparks are generated in a moment; and the motion which had preceded that event, and was conveyed by the spark itself, (if indeed it is at all to be taken into consideration,) after undergoing some modification of a latens processus, is multiplied, in an in-

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stant, to perhaps a millionfold. Whence does all this motion come, what is its antecedent, and from and through what is it derived? If we attempt to reduce it under any of our three laws of motion, each of them is inadequate, and all are equally overthrown. If we suppose that all this motion is *generated* among the particles of gunpowder by a Latens Processus, or in other words that the motion, the high prerogative of Mind, is generated or merely increased and multiplied by the matter itself, such an hypothesis is not worth the consideration of a moment. If we say that the fire forms, or compounds, or merely lets loose an *elastic* fluid—*ignotum per ignotius*—we only remove the difficulty a step further: what is the force which makes this fluid elastic? Elasticity itself and all similar powers are involved in the same consideration. If we should assert, with Brown and many modern philosophers, that the spark is the antecedent; and that the Deity

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has ordained the explosion as the consequent, independently of all other secondary causes, we fall into the hypothesis of Malebranch, and hold that the spark is but the *occasional* cause, while the explosion is the immediate production of the Deity himself, the only efficient cause; or we must take refuge in the extravagant hypothesis of the preestablished harmony of Leibnitz: which hypotheses every succeeding philosopher has been at no small trouble to expose. We may set down the spark and the explosion as immediate invariable antecedent and consequent, as phenomena like day and night immediately successive and proximately connected in time, for future consideration, if we please: but, if, in so doing, we assign the one as the efficient cause of the other, we assign a cause wholly inadequate to the effect. We do well to confess our ignorance: but if we imagine that inquiry stops with this confession, and sit down, as Lord Bacon

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calls it, with the received and inveterate opinion, that the inquisition of man is not competent to find out such matters, we make the most unphilosophical assumption of all, and forge a chain, which may for ages bind us in our ignorance.

The phenomenon itself is one of those unaccountable, yet not uncommon cases, which have led to the distinction between Physical and Efficient causes—the spark being the Physical cause, and this unknown intervening something, which forms, as it were, the Bond of Connexion, the Efficient. There is manifestly an extraordinary *extrinsic* power introduced between the apparent antecedent and its consequent, which affords at least some ground for the distinction between Physical and Efficient causes, unless the Physical be confounded with the Material. Even the present state of Science gives room to entertain the hope, that all the *proximate* Efficient causes will sooner or later be resolved into Physical, and

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that the chain may be completed: yet in the mean time those words are usefully employed to distinguish things so manifestly distinct.

It is this notion of an Efficient intervening cause, extended by analogy to other cases, in which some ordinary Latens Processus intervenes, though no increase of Power is to be observed, extended again, to every case whatsoever, that I imagine has had no small influence in giving rise to the fiction of an intervening *Bond of Connexion*. It has been attended, also, with a much more mischievous effect; and, inasmuch as *no Efficient cause* has hitherto been discovered, and such discovery is deemed impossible, it has led to the assertion, that *no Cause whatever* has been discovered, that the discovery of Causes is impossible, and that Causation is not the proper object of Philosophy.

In Physics, when we look for Causes, we seek nothing more than the chain of

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motion, or stress, or force, in Time, and the proximate continuity* of being with its qualities in Space: which are no other than the Material, Formal, and Efficient Causes of the ancients. If it should be asked why it is thus to be *presumed* a priori, that this chain of causes is continued throughout nature, the only answer to it is this,—that, in every branch of science, which has been investigated, and is *thoroughly* understood, such is the case; it has been ascertained by Induction: and as we can reason only from what we *know*, we reason by analogy from this known to the unknown, and draw a strong presumption in its favour. It might, perhaps, be at once objected, not only that such powers as Gravity, Repulsions, &c. are at variance, but that

* The celebrated Law of Continuity, insisted upon by Leibnitz, applies rather to the efficient cause than to the material, i. e. to the continuity of motion rather than of being: the two should be distinguished.

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the grosser bodies themselves never come into contact. With respect to this objection I would observe, that all the experiments and observations from which it is deduced, that the grosser bodies never come into contact, particularly the optical experiments, might equally, and, in some instances, almost conclusively, be adduced to prove, that there is some *substance* intervening. That there is a Latens phenomenon between almost every link in the chain of causation is unquestionable. But in collisions, and in most of the other phenomena, upon which Boscovich founds his system, there is evidently no introduction of extrinsic force; because the *momenta* both before and after the collisions, &c. are equal or the same. There is, therefore, only an ordinary Latens phenomenon to be explained. Before philosophical research had extended itself, the *links* only in the chain of causation were observed: and from them, when observation was ex-

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tended to the joints of the chain, we were directed by analogy to seek the same continuity of being and action, as was observable from link to link. Many cases of these ordinary latent phenomena at the joints have been investigated, and in all of them, which have been explained, that continuity of being and action has been found universally to obtain. Our proper course then is clearly to pursue the investigation upon that analogy. It is no wild or far-fetched hypothesis, but the very first that rises in the ordinary course of investigation: and, as far as we have proceeded, it rests upon an induction coextensive with our knowledge. Whilst conjecture runs furthest afield, truth is often overlooked, because it is seated almost within the homestall. It is, however, readily granted, that this idea of a connected and continuous chain of causation, though it is established by induction as far as our knowledge actually extends, may, nevertheless, as to its universality,

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be false; and it cannot be proved otherwise till all science is perfected; but the burden of finding and demonstrating an exception lies with its opponents, who might thus confute or limit it. Such systems, however, as that of Boscovich, start with hypotheses, far-fetched, and opposed to all the preconceived opinions and prejudices of mankind; and, but for the prevalence of the idea that prejudices ought to be abandoned, instead of being carefully examined, could never have worked themselves into notice, without the preliminary overthrow and new establishment of almost all the fundamental principles of science. With respect to Gravity, Repulsions, and the like, as I shall speak of them more fully presently, I shall here merely point out that it should be particularly noted, that they are phenomena with which we are not *thoroughly* acquainted; and with whose causes we are not acquainted at all. We cannot, therefore, legitimately build an hypo-

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thesis upon them; and if we reason from them, we reason from the *unknown* against the *known*, a method of proceeding grossly absurd and altogether inadmissible.

Not only are the causes, which produce any effect, the objects of philosophical research; but the manner, in which those causes act, is an object of such importance, as almost to have superseded the inquiry into Causation itself. In modern experimental Philosophy it is often laid down as a maxim, that the *laws* of nature are the only proper objects of human inquiry: and all investigation of causes is stifled by the dogma, which maintains, that the human faculties are incapable of investigating their nature.

There is scarcely a term in science, so obscure, and so much abused, as this word *Law*. It is said to be a Law, That the three angles of a triangle are equal to two right angles—That certain

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substances crystallize in certain forms —That all stones gravitate to the earth —That gravity varies inversely as the square of the distance. It is a law of the understanding, that we are convinced by demonstration; and of the affections, that we love our friends. These different applications of the word agree in this, that they are all *general propositions;* and most of them are *general facts.* The word law sometimes relates to the Classification of objects in Space, or of events in Time, to the phenomena of Causation, Material, Formal, and Efficient, indiscriminately, and frequently to the *Manner* in which these causes act: the latter of which is, perhaps, its most appropriate meaning. But the word Law has even a more extended signification, and is not unfrequently substituted for the Cause itself: and among the generality of men, who have thought somewhat, but not deeply, upon such matters, this usage of the term, with respect to

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the phenomena of gravity, is even the most prevalent of all: and, though never entertained for a moment by those who have paid due attention to the subject, it has become a form of speech, so common, that the most eminent philosophers* occasionally fall into it.

If it be not advisable, altogether to discard a term, so generally abused, it might advantageously be confined to the *manner* or *rule* according to which a Cause acts, or an Object is constructed, whether by immediate or secondary

* Dr. Young sometimes uses it in this signification, and Sir J. Herschel has inadvertently fallen into the same manner of speaking; "In the theory of gravitation," says he, in his celebrated Discourse, "the *Law* is all in all, applying itself at once to the materials, and directly producing the result." What produces the result? The Law? 'The laws of nature,' says Dr. Reid, in his maturest work, 'are the *rules*, according to which effects are produced: but there must be a *cause*, which operates according to these rules. The rules of navigation never steered a ship'—nor the law of gravity a planet.

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means. Human agents act in a manner capricious and uncertain: but the invariable constancy, observable in all the works of the Creator, enables us to look forward with certainty to the result: and the *manner* according to which it is performed is so determinately appointed, and as it were preordained, that we may not improperly denominate it a LAW.

Natural Philosophy, then, relates to the *Material Substances* which compose the universe: which Substances are known to us only by their *Qualities* as they coexist in *Space*, or their *Forces*, actions, motions, or accidents, as they operate in *Time*. Of these two great branches, Natural History is the mere classification, into genera and species, and description. Causation equally relates to both, and is the investigation of the nature and continuity of the Material, Formal, and Efficient Causes, the Chain of Being existing in Space, and the Chain

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of Action successive in Time, together with the manner or Laws, according to which the Individuals are constructed, or Forces propagated; and this not only in the Links, but in the Joints. If the investigation were completed through the connected links only, we should, in a manner, have perfected the grand outline of science; though the more delicate parts, the latent substances, and forms or qualities, and the latent processes at the joints should for ever be concealed. But, above all things, our attention is to be directed to that mighty introduction of Efficient Power, which forms the Bond of Connexion between so many of the phenomena commonly occurring in the universe. "As to the possibility," says Lord Bacon, upon this very subject, "they are ill discoverers, who think there is no land, where they can see nothing but sea." Let the opinion but once be afloat, that such things are not beyond us, and every

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hypothesis, that is started, examined, and rejected, will give us a further insight into the subject, or, at least, contract the circle of conjecture:; and we might stand a chance of being delivered from that stagnation in this branch of science, which has involved the philosophical world almost ever since the time of Newton. For notwithstanding the vast strides, that *Speculative* Science has made in astronomy, deduced to a degree of accuracy and approximation to the truth, heretofore inconceivable, which however, in its sublimest theorems, are but deductions and links in the descending chain and calculations of effects; notwithstanding the mighty applications of science in the *Operative* division of philosophy; and notwithstanding the great disconnected discoveries, and the mass of facts, which, from time to time, experimentalists have brought to light, rather as it were by chance, than by any well chosen system of investigation; it is not

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to be concealed, that in the ascending scale of Causation, we have scarcely advanced one single step for upwards of a century; though every ascent therein must necessarily open to the world prospects, more wide and brilliant than even the discoveries of Newton. And it is here that we must look for the next great step in the advancement of science.

From what has been said, it is evident of what vast importance are Natural history and Classification to philosophical pursuits. And of all the numerous systems of Classification, which the innumerable Resemblances of objects present, it is equally evident, that that system must be the most advantageous, which is rendered subservient to the investigation of Causes. How admirably, for instance, are the classification and nomenclature of Chemistry, describing the component parts, &c. adapted to such a purpose! and how lamentably deficient

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is the Linnæan system of Botany! If we proposed to ascertain the causes of the properties of a plant, what possible assistance could be derived from the information that its Class and Order are the Hexandria Monogynia?* And perhaps we may regard it rather as a fortunate circumstance, than otherwise, that none of the systems of Mineralogy have hitherto obtained a universal ascendency. In Natural History the great instrument of Classification is Resemblance: but it is not always that we are able at once to determine upon which, of the vast variety of similarities presented to us, an appropriate Classification may be formed. And, as many of the most important resemblances are intimately connected

* It is true that great service is rendered by any classification if generally adopted. If Hippocrates or Pliny had described their plants, medicines, &c. in the Linnæan system of Botany, it would have been of essential service. But in all systems of Natural history this ought to be but a very secondary consideration.

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with causation, a considerable advance must be made in that science, before we can ascertain whether our classifications are either useful or correct. We may class the Elements into Earth, Air, Fire, and Water. Such a classification will afford certain analogies or hypotheses, and assist us, to a certain extent, in our researches into causation. As soon, however, as we shall have pushed that science a little farther, we find it necessary to correct the classification which we had adopted: for we are as apt to err in our classifications, as we are in our analogical reasoning upon causation. The two sciences are intimately connected, and have a mutual tendency to correct each other's errors.

The preceding observations will throw some further light upon the *Method* of proceeding. If we would literally pursue Bacon's method, hunt for facts, classify them in tables according to his directions, and dismiss all prejudice and hypo-

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theses, such a method is not in our power. Not only will hypotheses suggest themselves, which we cannot get rid of if we would; for we feel an irresistible desire at every step to bring them to the test; but our discoveries in Causation will be continually disturbing our arrangements in Natural history. If however the tables were already constructed and perfect, if we had Natural History at our command, we could no more proceed in the investigation of Causes without Analogy and Hypothesis, than we could arrange and classify without Resemblance.

Having thus endeavoured to investigate the Method and Objects of Philosophy, to compare the ancient with the modern systems, and to glean from the former what appears to be of indispensable service to the prosecution of the pursuit, let us now turn to the Result.

That *Matter or Substance*, by which

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Qualities are supported, exists, is an article of belief the earliest acquired, and the most universal among mankind: though its existence can only be inferred from the qualities which it upholds. And it is by the chemical resolution of compound substances into more simple substances, and by the establishment of the Atomic Theory that this branch of science has of late years made its greatest advancement.

Three out of the four elements of the ancients have been resolved into more simple substances; and, as might naturally be expected at first, the progress of science has multiplied, instead of diminishing, the acknowledged number of undecompounded substances. Its further progress, and the more severe analyses, that are applied, sometimes increase, but have a natural tendency to diminish that number. And it is the business of Philosophy, as far as it regards Matter, to ascertain how many, and what these

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simple substances may be, of which it is composed; and whether it consists of ultimate atoms, indivisible impenetrable particles; or whether it is infinitely divisible. It is often supposed that among the ancients, the Epicurean school alone maintained the existence of atoms: but the Pythagoreans and Plato maintained it likewise, though not such a wilful democracy of Atoms as that of Epicurus: nor am I aware that any of the ancients, previously to Aristotle, held the infinite divisibility of matter. Neither of these opinions, perhaps, can be brought to the test of experiment; we can rest only in analogy; but I think the accuracy of the results and calculations upon the Atomic theory, plainly induces us to prefer the atomic opinion, upon the same grounds that our faith in the law of gravitation is strengthened, by the accuracy with which the planetary movements coincide with their calculated courses, that is, it rests upon analogy confirmed by obser-

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vation. The inference also, in favour of atoms, drawn by analogy from a substance, always dividing and compounding at the same angle, is far superior to an argument resting upon the infinite divisibility of a mathematical line: inasmuch as it is suggested by a fair analogy from one physical phenomenon to another: whereas the latter is only a mathematical illustration of a physical possibility: they are not at all of the same kind; the subject under consideration is purely material, the illustration purely ideal. The same may be said of Euler's ingenious argument, "All matter is endued with extension. It therefore possesses all the qualities of extension; one of which is infinite divisibility." For it does not follow, because all matter is endued with extension in the concrete, that it has all the properties of extension in the abstract; only that it might have had, if it had pleased God to make it so.

We can never expect to ascertain what

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matter itself is, or in what manner it subsists. If we should ever succeed in determining the *number* of the simple substances; and, if they are composed of atoms, the *forms* with which those atoms are invested, we shall then have completed all that is within our reach. And if all the qualities of bodies, independent of force and motion, shall be resolved into the mere form and hardness of these component atoms, what the substances themselves may be, it would be absurd to inquire: but we might fearlessly conclude that the same substance ran throughout the whole.

Almost all the *Qualities of Matter* were resolved by the ancients into its Form: and by the union of Form with Matter the Sensible world was supposed to be produced. As I would bring forward those parts only of the ancient philosophy, which may be turned to account, I omit mention of their ingenious meta-

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physical speculations upon the nature of Form and Matter, Bound and the Boundless; and shall merely observe that the system would naturally tend to resolve all the qualities of Matter into the primary ones of its extension or Form, and the absolute hardness or Impenetrability of its component parts.

Besides the obvious formal qualities of matter, there are certain other secondary qualities, which may be termed supposititious, conventional, or occult,* inasmuch as the words Elasticity Colour, Inertia, Gravity, and many others,

* I use the word *supposititious*, which implies spurious, as well as hypothetical, in preference to *occult*, not only to avoid offence, but in better keeping with what I have written upon theory and hypothesis. The word *secondary*, has been used: but it neither expresses the meaning intended to be conveyed, nor includes under it all the qualities which it ought. The word *occult*, as well known, would perhaps be better, but it has been sadly abused. The occult qualities, however, of Aristotle are not the nonsense usually fathered upon him. He uses the words Gravity, for instance,

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are words conventionally assumed to express certain phenomena themselves, or the unknown causes of such phenomena, which have been traced no higher, but which still remain desiderata, to which the attention of science should be directed. They may perhaps be resolved into some immediate formal cause, or into several intermediate links in the chain of efficient causes, or latent processes. But it should never be forgotten, for a moment, that these words, expressive of what are called the qua-

and Levity, precisely as we do ourselves in reference to heavy and what we call imponderable bodies, expressly however denying them to be occult qualities or virtues; and endeavours to seek the causes not only of these, but of the properties of the Loadstone, and of the Inertia of Projectiles: and, however nugatory his attempt, it is evident from the attempt itself, that he never dreamt of advocating such doctrines as have been imputed to him. Again, with respect to the abhorrence of a Vacuum, I verily believe there is not one syllable upon the subject throughout his works. See VIII. Phys. 4. 10—III. De Cœlo 2—IV. Met. 14.

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lities and properties of matter, in themselves, convey no explanations, but are merely assumed, conventionally, from the necessity, which our ignorance imposes upon us, to use some stated general terms as names for the unknown causes of certain classes of phenomena, the individual phenomena of which classes, however they may differ among themselves in some respects, have nevertheless certain similarities, which obviously point them out as the effects of one and the same kind of cause. If we mean any thing further by the words, we wilfully deceive ourselves. If we really imagine that bodies are attracted by Attraction, we should be equally justified in accounting for their lightness by Levity, for their cohering by Cohesion or Suction, for their parting from one another by Partition, or by any barbarous term it might be our good pleasure to coin: for nothing is easier than to convert the verb, expressive of the effect, into a corresponding

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substantive. The words are nevertheless extremely convenient, and are not lightly to be rejected, but must be gradually laid aside as the real causes are ascertained: thus we have laid aside the term Levity as a supposititious Cause, having at length revolved the phenomena of lightness into those of Gravity, confirming the hypothesis of Timæus. In like manner, the word Suction has almost been forgotten, by the resolution of the phenomena of the pump into the weight of the incumbent air. Sir Isaac Newton attempted to resolve the Elasticity of light, as far as it concerned reflection, into a latent process, the attractions of a fluid upon the surfaces of bodies: and if he had succeeded, the word Elasticity would, long ere this, have been lost to us as a supposititious cause.

With respect to the Qualities of matter, we are led, by all the Analogies of nature, to suppose that they may be resolved either into formal causes, or into

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phenomena depending upon motion: and it must be our grand object to ascertain the real causes corresponding to the words we use to express them; and gradually to expel those phrases, with which philosophy is overrun. I must, however, defer the further examination of them till I speak of the Efficient causes, to which they more properly belong.

In the phenomenon of COLOUR, which comes more properly under this division, the Metaphysical distinction drawn between the *Sensation and Perception* by the Mind and the *Quality* of the body, which was the cause of that perception, —between the redness, with which the senses are affected, and the supposititious quality of the body, which so operates upon light as to produce that sensation and perception, cleared away several strange incumbrances. But the grand discovery that redness or any other colour may be communicated to bodies by the mere

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alteration of their superficial texture, has gone far to resolve the colouring quality into the texture or form of the superficies, and to merge the supposititious or conventional quality into a formal cause, one of the primary qualities of matter. From the perception of colours we may trace the chain of antecedent causes of Matter and Form through the optic nerve, through the eye, to the light, to the coloured body, and again to the light. And we may trace also the descending chain of action or motion from the general unmodified motions of the light, as first admitted into a chamber, before it strikes upon the body, its alteration at the body, every point of which becomes a centre from which a sphere of motion is propagated, of such a nature, as, when passed through the eye and optic nerve, to produce that sensation, which is followed by the perception of colour.

In England, till within the last few

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years, the Newtonian hypothesis of LIGHT has had a very general ascendency; but at present that of Huygens bids fair entirely to supplant it. From the similarity which obtains in nature between one fluid and another, I would venture to suggest, that these two hypotheses may not be altogether and fundamentally opposed, but are capable of being reconciled, at least in part; and that light has not only a *progressive*, but a *vibratory* motion also; that to its progressive motion are to be attributed the phenomena of brightness, illumination, shadow, and some instances of inflection, reflection, and polarity; and that upon its vibrations depend the phenomena of colour, sight, and all the rest; and that the vibratory motion, requisite for the production of Vision, is caused by the progressive, reflected, and impeded motion of the sunbeams, by a change from the *aggregate* progressive motion of the rays into the *atomic* vibrations of the fluid.

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Such an hypothesis is suggested by the analogies of air and water, in their progressive motions of wind and streams, and in their vibratory motions of sound and waves. It is a fair hypothesis, which, if it be confuted when brought to the test of experiment by Induction, may afford some results, upon which something more plausible may be offered.

If we cast a stone into a pool of water, waves proceed from the point of the submersion of the stone on every side, forming a number of concentric and expanding circles. As these circular undulations reach the sides of the pool, or if they meet with any stakes set up in the pool, they are rebounded: and the front of each stake or object becomes the centre of another set of concentric waves, which cross and pass over one another in every direction, with little or no interruption. And if the agitation of the pool be great, so as to be well rebutted from its sides, concentric circles will be completely

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formed round every stake. If a stream of water be projected through or into the pool, and interrupted in any manner, so as to cause a vibration of the water, the same result may be observed. But it must likewise be remarked that in the production of such effects, the primary momentum, causing the agitation of the pool, either by the stone, or by the injected stream, must necessarily be greater or at least equal to the sum of the momenta of all the separate concentric waves.

If a bell be struck by a hammer, or, in any manner, be put into agitation sufficient to cause similar undulations in the air, similar concentric waves are formed, which, when received upon the ear, affect us with the sensation of sound. If a blast of wind rush violently through any place, in which different bodies are contained, it causes an agitation of the air; and certain objects, peculiarly susceptible, are affected and emit sounds,

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becoming centres of vibration; but all the rest are silent. And their silence is a matter of course, because the most violent hurricane, that blows, travels at little more than one-tenth of the velocity of sound: and nothing, that can be opposed to it, is capable of converting its *aggregate* into *atomic* motion. If this could be done, and a shock could be communicated to the air, so intense as to be capable of affecting the particles of the bell, in the same degree as it is affected by a stroke from the hammer, there can be little question, that not only the bell, but even the dullest rocks, under similar circumstances, would ring, and become centres of sonorous undulations, as is partially to be observed under a discharge of artillery, and in an echo. It is even possible that, like some musical pillars, they do so, as it is; for notes so *base and deep*, as they would necessarily produce, probably could not be apprehended by our faculty of hearing.

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Having marked the vibratory and progressive properties in water, a gross and inelastic fluid, and again in greater perfection in the air, we might with much reason argue, that in such an elastic and subtile fluid as light, both the vibratory and progressive motions might *a fortiori* be expected.

Ten years ago I commenced a series of experiments in examination of this hypothesis, which were interrupted by occupations of a very different nature. Since that time a complete revolution has taken place in this branch of science. But in the splendid discoveries, which indefatigable research has brought to light, I have seen no reason to think it open to refutation. And in the substitution of an entire Hypothesis of Huygens for that of Newton, I think we are pursuing the course, so common, and indeed so natural in the overthrow of every prejudice, of running into the opposite extreme, and rejecting the truths of the

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Newtonian hypothesis with its errors, and pushing the rival system further than is warranted by the facts. I put it forth, however, now, merely as an hypothesis for examination, and shall forbear, in a treatise like the present upon the mere *theory* and not upon the *detail* of science, to enter into any experimental inquiries, further than is necessary to obviate a few of the following objections, which, by the partizans of either of the rival systems, have been deemed insuperable to the other. And I abstain the more readily, because, when an hypothesis is proposed on such a subject as this, in which there is such an ample collection of facts, a hostile hand is more capable of detecting its defects.

Upon the hypothesis that light is a projectile only, it is maintained, that it ought always to have momentum: but, in the phenomena of colour, this is not found to be the case. Upon the hypothesis that light is but a vibratory mo-

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tion, it ought to have no perceptible momentum in any case whatever: but when a sunbeam impinges upon any object, it *has* momentum, and causes an atomic motion in the form of heat, sensible to the hand, and intolerable to the eye: and if the aggregate motion of the sunbeam is not the antecedent in the chain of action, being converted into this atomic motion, whence does this atomic motion come? The perceptible momentum of light in a sunbeam is a serious objection to the hypothesis of Huygens; the want of it in the phenomena of colour, is an objection to that of Newton. In the hypothesis, which I have advanced, both these objections vanish: since, in analogy to the air, it has momentum, when projected like the wind: and in its vibratory movements, analogous to the sonorous undulations, none can be perceived.

Again the very common objection, that, upon any vibratory hypothesis, our

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vision ought to extend round corners, has no force in it whatever, if properly considered.

All that we see of any object is its *colour* and not its form.

It is quite an acquired perception, and merely a matter of experience, that we are able to refer either colour or form to the object we perceive.

The *visible appearance* of every object is so different from its *tangible form*, that it is likewise by experience alone, that we are capable of judging of the form of any object whatsoever.

Bearing in mind these three preliminary observations, which are well established facts,* let us examine the proposed objection.

If a *single* sound be propagated from any sonorous object, we are sensible of it, though we should hear it behind a corner. In like manner, if any single

* See Berkeley, Reid, and, in short, every metaphysical treatise upon the senses.

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colour, such as the glare of a red brick wall, of snow, or the greenness of a forest were presented *alone* behind a corner, we ought according to the analogy to perceive the *tint*, which ought to be conveyed into the room, provided the fluid light were in a state of very intense agitation, as is the air when a bell is struck.

Again, as the ear receives *successive* sounds, and thus we are enabled to comprehend the syllables which compose a sentence; so the analogy requires, that, if objects, glaringly coloured, were *successively* presented behind a corner, we ought to be able to enumerate the *successive* colours, as the red, the white, the green.* And this, from many observations, I have great reason to believe is actually the case, though I should be

* N.B. We must not confound such coloured objects with luminous bodies emitting coloured rays such as blue or red flames, from which the light may be propagated progressively, as well as in vibration.

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cautious in positively asserting it, without many more experiments than I have yet been able to direct to that subject: for the total exclusion of reflected rays is so difficult, and the overwhelming influence of any coloured object upon the field of vision is so intense, as to render these experiments extremely inconclusive, from the great delicacy they require.

From the case of sounds and colours, propagated singly or in succession only, let us proceed to that, in which many are propagated at the same time. When several sounds are propagated at once, if we should endeavour to attend to them all together, we quickly find it to be impossible: and it is only by directing attention to each successively, that we are able to comprehend them. Where two or more sounds are in unison, and even when they are only in concord, we receive them together but as one *single* complex harmonious tone: if they are not in concord, we receive them *alternately* as the

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successive gratings and jarring of a discord. The analogy then requires us to receive the colours, propagated from several objects, (where those objects are not in the direct line of the eye, but their colours are propagated round a corner indiscriminately,) either as a single complex colour, or in succession only.

Again, not only can we comprehend the successive sounds which compose a sentence uttered behind a corner; but by experience we can form an estimate of their *distance* from the ear, if we are acquainted with the voice. In like manner we might expect, by experience and attention, not only to be able to enumerate the separate colours, if successively presented, but, given their brilliancy, we might form some estimate of their *distance.*

These are all the points of similarity, that the analogy between sounds and colours presents, relative to the subject in hand. In all analogical cases, how-

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ever, we must not only look to the resemblances, but to the differences, which appear between the phenomena, that are compared. Now there is one great difference between sounds and colours, in that, the former are, for the most part, of short duration and adapted more particularly to *succession:* whereas the latter are generally *permanent*, every point of every object shedding without intermission its own peculiar sphere of colour. There is likewise a great difference between the articulation of a sentence, and the perception of the distinct parts of any object of vision; which two are often supposed to bear some kind of resemblance to one another. The ear could never comprehend a sentence, whose every syllable was pronounced at once; and the eye is enabled to perform an office analogous to such comprehension, that is to say, of presenting us simultaneously with the different points of the object, only by its telescopic construction in the

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peculiar formation of its retina and lenses. The great difference, then, is, that by the ear we comprehend sounds only *in succession*, by the eye we *simultaneously* perceive the different *coexisting* points upon the field of vision.

To enable us to see an object, it is requisite that an image of that object should be formed upon the retina. The principal circumstances, upon which the formation of such an image depends, are the *distance* of the object from the retina, the preservation of the proper *divergency* of the coloured rays emanating from the different points of the object, and the perception of the *real situation* of the object itself, and of the *relative situation*, which every point bears to every other point of the same object.

With respect to the *distance*, if one single colour alone were transmitted round the corner, or a mere succession of colours, then, as I observed before, the analogy of sounds gives us reason to ex-

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pect, that if we were acquainted with their brilliancy, we might form some vague estimate of their distance, and nothing more. But any thing so vague as this is evidently not sufficient for the formation of an image.

Again, with respect to the preservation of the *divergency* of the rays, which is the grand requisite for the formation of an image upon the retina, it is manifest, that when each propagated sphere of coloured rays is modified by passing round a corner, the proper divergency must be entirely lost: or if any thing by way of an image could be formed by rays propagated in such a manner, it is clear, from the mathematical principles of optics, that every point of that image must be referred to the corner itself, and not to any object that is behind it. And this must necessarily be the case, unless the divergency of the rays from every point of the object be preserved, by being reflected or refracted by a mirror or some

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similar contrivance, which may present to us a *virtual* image in the direct line or axis of vision.

Supposing, however, for a moment, that the divergency were preserved in the vibration so as to form an image of a *point* upon the retina, still no image of an *object* could be formed, unless the *relative situation* of all the points of the object to one another, and the *real situation* of the object itself could be preserved and ascertained. Now the analogy of sound gives us no reason to expect any thing of the kind, but directly the reverse. For though we may form some vague estimate of the distance of a sonorous body, which is out of sight; we are utterly unable, by merely attending to its sound, to determine whereabouts it is: and if we attempt to guess at the precise point, having no previous knowledge of the circumstances in which it is situated, we are *invariably* deceived.

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The analogy, therefore, does not teach us to expect to determine the situation of any single point: much less, then, can we expect to ascertain the places, either real or relative of all the innumerable points which compose the object. If we heard two bells tinkling behind a corner, we should be as likely to judge them close to one another as to be two or three yards asunder: and what reason we can have to suppose, that the relative situation of the different points of vision could be more accurately conveyed, I cannot conceive; certainly no analogical reason.

In addition to all this, we must recollect, that the image upon the retina is no real picture of the object, but only, as it were, a transcript of its *visible form*, and that the perception of the object itself is only a *judgment* of what is its *tangible* or *real form* and situation, and an inference of experience only, from our sensa-

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tion of the image upon the retina; which image is only, as it were, the sign by which we judge.

But let us suppose that an image could really be formed upon the retina by rays vibrating round a corner, and that thereby we actually perceived the object. Where would the object appear to be situated? Evidently it must appear in the axis of vision, that is, in the straight line drawn from the eye to the corner and produced: and in the very same axis every object behind the corner, and in the same plane, must also appear: so that we should have every object whatsoever behind the corner apparent, as it were, upon the same meridian, together with all the objects which might happen really and actually to be situated upon it: but for all this the analogy of sound does not afford the slightest pretext.

It is perfectly clear, then, that the expectation of seeing objects round corners, upon any vibratory hypothesis

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whatever, arises from inattention to the subject. Upon the hypothesis of Huygens, it is not to be expected that an image should be formed, or an object seen, in such circumstances; but only that rays of *light* as well as *colours* should expand themselves in every way. Upon the hypothesis, which I have proposed, *colours* alone, and not the rays of light, should be expanded; and this only when they are presented in succession and never several at a time; and not even could this take place unless the agitation of the fluid were intense.

As an objection, therefore, it is completely a mistake of the question. I have been more particular and I am afraid tediously minute upon this point, because the objection has been considered so extremely formidable, and I do not recollect ever to have met with a proper refutation of it.

But, however futile such an objection may be, when directed against the phe-

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nomena of colours, and objects of vision; it assumes a very different aspect, when directed against the supposition, that a sunbeam is propagated by vibration only: for the propagation of light or brightness itself round corners, is a very different thing from the transmission of images or forms. If a sunbeam passes into a chamber, through an aperture; with certain allowances to be made, easily accounted for, on the principles of refraction, inflection,* &c. it never deviates from its course, it never expands itself in a glare of brightness or of colour, as if it were a mere vibration, it forms no concentric spheres or circles round the aperture, but passes in a straight line, direct, as far as it is permitted, like a current of wind or water. And it is apprehended, that, could the

* Under which allowances may perhaps be classed the phenomena, which appear, when the apertures are very small. See Dr. Young's observations upon that subject.

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experiment be accurately tried by the exclusion of the motes, which float in it* and break and reflect the ray, and of the cross beams from the aperture, it would pass through an opening on the opposite side of the room, and leave the room itself in darkness as complete, as are the parts behind a planet, over whose edges the light is poured in a continued stream. It is an experiment, that in the heavens is tried on the largest scale: and a shadow is extended from one planet to another, without the appearance of any vibration of the sort. It is likewise apprehended that no objects, which are not in themselves luminous, ever become visible, unless the rays of light introduced be broken and dispersed throughout the chamber, so that their *aggregate* motion is converted into *atomic*, and

* Nam jubar solis in cubiculo tenebroso non cernitur, nisi quatenus lux reflectitur e pulverum et fumorum particulis per aerem semper volitantibus. —*Newt. Princ.* 509. *Edit.* 1726.

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causes a general and intense vibration of the fluid.

The objection that if a *sunbeam* or a *ray* of light is a vibration, there could be neither shadow nor darkness, I think, remains in full force against the vibratory system of Huygens. Upon the hypothesis I have proposed, both of projection and vibration, it is evidently harmless: for, if applied to air, it would insist, that, because *sound* is propagated by the vibration of the air, a person could not stand out of the *wind* by placing himself under the lea of some sheltering object.

A ray of light appears to me to follow the laws of other fluids. It acts and is acted upon by mechanical causes in the same manner as a stream of wind or water; and is subject also to similar mechanical operations in a vibratory capacity. In some instances, as in the phenomena of prismatic colours, it seems to combine the two notions at once, analo-

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gously to the vibratory blast which issues through a trumpet. And indeed it is highly probable, that, on its progressive motion a vibration is universally attendant. And upon this hypothesis perhaps some of the curious phenomena of polarity would meet with an easy solution.

We see objects for the most part by means of colour, and therefore, as I think, by means of the vibratory motion of the fluid. But it by no means follows that we should not also distinguish them by means of the projected rays. Our perception of the form and superficies of an object, as I observed before, is a mere matter of experience, and a judgment from the visible form impressed upon the retina. When we perceive an object by its colour, we draw our judgment of its tangible form, not always from the colours only, but from the variety of lights and shades apparent upon its surface: and we may form a

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similar *judgment* when the lights and shades are exhibited in *splendor* instead of colour, though we cannot perhaps so well examine its minutiæ. Thus, in any luminous body, or in a body from which Splendor is reflected, by its brilliancy in one part, its deficiency in another, and its total absence from a third, or around its external edge we may form a judgment of the inequalities of its surface and of its figure, as in the case of the sun and moon. The phenomena of Splendor and of Lights and Shades have not been properly attended to: and a thorough examination of the subject is a desideratum in philosophy. If we would paint the lights upon the prominent parts of the human face, or upon any metallic utensil, or other object whatsoever, we should paint them, not with a thicker coat of colouring laid upon the part, but with a different and a whiter tint. Is this to be esteemed a more intense vibration, or is it splendor? Inasmuch

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as the position of the illuminated spot varies with every variation of the position of our eye, and inasmuch as it makes the angles of incidence and reflection with the luminous point and our eye equal to one another, the ray, by which we perceive it, follows the laws of a *projectile only*. Inasmuch as its brightness may be increased so as to become painful to the eye (and the mildest of these phenomena differ from the most intense only in degree and not in kind,) it follows that they have all *momentum*. And I think that from hence we might infer that the phenomena of Splendor might with propriety be referred to the cases of *projected* light.

The ancients reckoned Splendor as a distinct colour. This however it is not: for when it is attended with great heat, it exhibits the appearance of the red; in its intensest glow, of the white; in a less vivid form as upon ordinary occasions, and in reflected light, it commonly ap-

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pears as the yellow: and in such cases, if the reflected ray be a fluid in progressive motion, it is possible that that progressive motion may partake at the same time of the vibration which is peculiar to the yellow tint. In other cases, the reflected ray partakes of the colour of the surface from which it is reflected, and possibly its vibratory motion receives a modification by being reflected at the surface.

Transparency also among the ancients was deemed a distinct colour. In every great continuity of a transparent medium a resemblance is in this respect remarkable. A distant mountain, seen through a considerable space of air, is blue; so is the sky itself, so is a glacier, when we look down into it, and so likewise is the sea off soundings. And this blueness may be the result of a continued but more gentle motion of this universal fluid.

Another observation I would make,

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which I deem of much importance to the solution of some of the most intricate optical phenomena, viz. That we have every reason to suppose that the *momentum*, with which a sunbeam is projected into a room, is far greater than, or at least equal to, the sum of the *momenta* of all the vibrations that it causes, such momenta being imperceptible; though its actual *velocity* may probably be less than that of any separate vibration; as the velocity of the hammer, which strikes upon a bell, is incomparably less than the velocity of the faintest sound which it excites.

Upon the different hypotheses of Light, that have been proposed, much confusion has arisen from three distinct significations, in which that single word is used. The fluid, conceived to be *in progress*, as a sunbeam, by the Newtonians, is termed Light or a ray of Light. The fluid in a state of *vibration*, according to the hypothesis of Huygens,

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causing sight, analogous to the aerial undulations, causing sound, is likewise termed Light, or when partially examined a ray of Light. Whilst our nomenclature affords us no other term for the *undisturbed fluid* in a room, analogous to the undisturbed air or water in the pool. Hence difficulties frequently occur, which arise only from a misapprehension of the terms.

If we turn our attention to the Chain of Action, we shall find that it consists of Motion or Stress, both of which imply Force, communicated through different portions of the material world.

All motion and tendencies may perhaps be ultimately traced to the forces of Animals, Gravity, Inertia, Elasticity, and the Etherial powers of nature.

The natural or common motions and pressure of Water are resolvable into the forces of Air, Gravity, and the like. The natural or common motions and

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powers of the Air may be again resolved into those of Gravity, Elasticity, and Heat. Galvanism, Electricity, and certain Chemical phenomena, might perhaps, if science were properly directed to the investigation, with little difficulty be resolved into a chain of the varied action of one and the same etherial fluid, of which Fire is but another form: inasmuch as chief part of the results appear to be but the conversion of aggregate into some species of atomic motion, and the reconversion of this atomic motion into aggregate. The phenomena of Magnetism might perhaps be similarly resolved.

Now in these phenomena the great dispute among philosophers does not so much concern the chain of *action* and motion, which is, however, far from ascertained, as the chain of *being* through which such action is propagated; whether the motion be communicated through the grosser particles of matter, or through

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some subtile fluid which pervades all nature, or through several different fluids endowed with different properties, such as the Galvanic, Electric, Magnetic, and other fluids. From the sameness of many of their effects, and from the consideration that they *all* appear *equally* extended throughout the universe, if we should presume that they were but one and the same fluid, we should start an hypothesis indeed, but an hypothesis particularly worthy of attention, for unless such be the case we shall have in nature several fluids coextended through the universe, all of which, as it has been ably shown, continually perform each other's offices, that is to say, several different causes more than are necessary for the solution of the phenomena.

The investigations of Lord Bacon led him to conclude that HEAT was motion. Many recent philosophers of the greatest eminence incline to the opinion, that it

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is a fluid substance, of great subtilty, which they denominate Latent Heat, Caloric, or the like. Between these opinions there is not necessarily any real opposition, and if both of them were ascertained to be true, but little more than one half the problem would be solved. If Heat be Motion, there must be something moved; there must be a chain of being through which such motion is propagated; whether it be a subtile fluid, or only the grosser particles of bodies subjected to the heat. But if Heat be admitted to be an Etherial fluid, surely none of the supporters of that opinion will undertake to deny, that this fluid is in motion, wherever it appears under the form of Heat. When it is at rest we may term it Latent heat, or Caloric, or Ether, if we think proper; but, unless we recollect that such terms are merely conventionally assumed to express a *suppositious material cause*, the use of them is liable to degenerate into an abuse

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of a very serious nature: inasmuch as under each of them lurks an hypothesis, which is but flimsily concealed.*

With respect to Heat itself the truth appears to me to be that Lord Bacon, Sir Isaac Newton, Dr. Young, and Sir Humphrey Davy more particularly directed their attention to the chain of its *action* only; whilst other philosophers have gone very far to ascertain, that the chain of *being*, through which this action is propagated, is not the solid particles of bodies, but a substance distinct from

* Ether more than half assumes that all the etherial fluids are reducible to one and the same. Latent Heat and Sensible Heat likewise assume that the fluid is connected with the phenomena of heat alone, to the exclusion of the rest, and are neither more nor less than a revival of the ancient distinctions of Aristotle, of Heat in Capacity, and Heat in Energy. Caloric leans rather too much to Bacon's hypothesis. It is also used sometimes to express a kind of indefinite superfluity of temperature. Caloric, if restricted, seems best adapted to present purposes; though probably Ether will ultimately prevail.

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them, a subtile fluid. Yet, if, in all these phenomena, relating to the etherial powers of the Universe, we should make no further question, but were fully satisfied upon this part of the subject, the problem is still unsolved even as to its Natural History, without going into its Causation.

The next step in the investigation is to ascertain what species or kind of motion it may be. Is it vibratory? Is it progressive? Is it direct, or reverberating, or radiating, or circulating, or what? The difference of the species of motion appears to constitute chief part of the difference between Heat, Light, the Electric, Nervous, Magnetic, and other similar phenomena. When we have ascertained what species of motion it is, the further questions remain. Whence is it derived? What are the causes, which produce this motion, and this species of motion rather than any other? and in what manner do they act?

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We look with contempt upon the not very happy division of Aristotle; of the different species of motion: and, with much complacency, we reduce them all to one and the same kind, that is to say, a Change of Place: and then we charge him with a misconception of the subject, for thus unnecessarily introducing the same idea, under a different form, as a new idea,—a misconception, as usual, to be found only in our own misapprehension of his doctrine: for upon that subject he maintains * precisely the same tenets that we do ourselves. Motion, as a Change of Place or Position,† is in

* VIII. Phys. 7. See also Plato De Leg. 10.

† We are accustomed to hear that motion is a simple idea, and therefore cannot be defined. Yet Aristotle, Dr. Young, and many of the most eminent philosophers have given definitions of motion. It is evident that no objection to its definition can be maintained on account of its being a simple idea; for, as it is a generic term comprehending under it species and particulars, it can unquestionably be defined as the genus, comprising the particulars, which we may enumerate, such as Progression,

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fact the *primary*, which is accessory to all other motions, and indeed the *genus* under which they must be classed: and so far from rejecting all the subdivisions or species of motion, I suspect we shall find it necessary to enlarge, instead of contracting the vocabulary.

The most remarkable of the supposititious qualities of matter, depending

Increase, Diminution, Vibration, Circulation, Walking, Swimming, Running, &c. Aristotle has given its Definition as a *Change of Place or Position*, that is, by a genus and a specific difference. To this it is objected, that we cannot define the word *Change* without the use of the word *Motion* in some form or other. Now this is the real difficulty, which lies, not in motion being a simple idea, and therefore indefinable, but, in the definition of the word *change*, as its genus. It is, however, a matter of curiosity, rather than of difficulty. The Species comprehended under the word Change are, physically, only two, viz. Changes in the material world, which are motions; and Changes in the mental, as in the train of thought, and the like. From the structure of language, it *happens*, that we have no means of describing *any phenomena*

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upon action, are Inertia, Gravity, and Attraction.

Gravity, in the present state of science, is an anomaly in nature, to which no parallel exists: for we are acquainted only with its laws, without a trace of the antecedent proximate links in the chains of Being, and Motion or Force.

The conceptions of Sir Isaac Newton, upon the subject of Gravity and Attraction, are perfectly clear and defined:

whatever in the mental world, except in words and images *drawn from the material.* Hence we find it impossible to describe *change* in the mental world, except in words and images taken some way or other from *changes* in the material, that is, except in words expressive of *motion.* Hence it happens, *accidentally*, as it were, that the *generic term* cannot be described, except in terms, involving the specific difference of *one* of its species: and thus the definition, apparently, but not absolutely, becomes imperfect. The same may be said of some other definitions, which have been rejected upon similar grounds. Motion, so far from being a simple idea, is in fact an idea so general, that the real question is, whether or no we can find a generic term, under which to comprehend it.

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though there is an ambiguity in the words, as they are used both for the cause, and for the effect, that has led to some misunderstanding. In the Principia, and in general, he uses the words, not for the *effect* itself, as Dr. Clarke, in his controversy with Leibnitz, affirms,—not for any *inherent quality*, with which matter may be endued,—nor for any *stress or motion* with which it may be affected: but he uses them merely conventionally, for the antecedent cause of the effect of gravitation; whether the cause be a formal cause, or whether it be motion or force communicated through an antecedent chain of being, or whatever it may be hereafter ascertained. By the universal *effect* of gravitation or the *tendency* itself, proved by Induction from Experiment and Observation upon bodies within our reach, and extended by Analogy, confirmed by Observation, to the celestial bodies and those which are beyond us, it is evident that such a

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cause exists, be it material or be it spiritual: and the knowledge of its existence, and of the *law* according to which it acts, are sufficient for all the purposes, to which, in mathematical deductions, it can be applied.

Sir Isaac Newton laid down as the first rule of philosophizing, 'that no other causes ought to be introduced than such as are true, and sufficient to account for the phenomena.' And he followed his predecessors in maintaining the Inertia of Matter as exerted in the first law of motion, as an inherent, though it may be supposititious quality. But, to account for the undiminished motions of the planets, he was compelled to assert a Vacuum, or at least a *quasi* vacuum. Yet he hesitated to maintain Gravity as an innate quality of matter, as it would have involved him in an inconsistency in his idea of causation, as expressed in his own rule. He therefore left directions to succeeding philosophers to seek its

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cause; and pointed out, as a fit subject for speculation, an hypothetical subtile ether, with which the supposed vacuum might be filled, as capable of supplying the deficient links in the chain of causation. And he left such directions expressly to clear himself from the imputation of holding gravity among the essential properties of bodies.* The notion, however, of attraction or gravity, as an occult quality actually inherent in matter, is extremely ancient: and, as it has ever been a received opinion among very eminent men, the philosophical world would

* "Et nequis *gravitatem* inter *essentiales* corporum proprietates me habere existimet, quæstionem unam de *ejus* causâ investigandâ subjeci. *Quæstionem*, inquam: quippe qui *experimentis* rem istam nondum habeam exploratam."—*Monitio altera ad lectorem*; prefixed to the *Optics*. Again, in the second letter to Dr. Bentley, he says; "You sometimes speak of Gravity as essential, and inherent to matter. Pray do not ascribe that notion to me: for the cause of Gravity is what I do not pretend to know, and therefore would take more time to consider." p. 20.

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not be exactly justified in rejecting it at once with the contemptuous expressions,* in which it has pleased Sir Isaac Newton to reprobate it.

Many of the professed followers of Sir Isaac Newton, little appreciating the depth of his views, but sufficiently alive to the physical inconsistency of main-

* "It is inconceivable that inanimate brute matter should, without the mediation of something else, which is not material, operate upon, and affect other matter without mutual contact, as it must be, if Gravitation in the sense of Epicurus, be essential and inherent in it. And this is one reason why I desired you would not ascribe innate Gravity to me. That Gravity should be innate, inherent, and essential to Matter, so that one body may act upon another at a distance through a *vacuum* without the mediation of any thing else, by and through which their action and force may be conveyed from one to another, is to me so great an absurdity, that I believe no man who has in philosophical matters a competent faculty of thinking, can ever fall into it. Gravity must be caused by an agent acting constantly according to certain laws; but whether that agent be material or immaterial I have left to the consideration of my readers." *Newton's III. Letter to Dr. Bentley*, p. 26.

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taining the Vacuum and rejecting Gravity as a quality, hesitated not to assert the absolute vacuum, and gravitation as an inherent quality of matter; not adverting to the insuperable metaphysical difficulty thus introduced, that they eventually maintained two distinct and independent chains of causation, continually crossing each other and assuming each other's offices: by one of which motion was communicated, through matter in contact, by impulse and vibration, in continued succession; and by the other through vacuum by means of occult qualities commonly so called: by either of which the same effects might be produced. Euler and other foreign philosophers, more sensible of the real difficulty of the case, rejected without a scruple such a version of Sir Isaac Newton's opinions, upon the express grounds, that two secondary causes of motion, one from Inertia, the other from Attraction, were utterly incongruous and inadmis-

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sible: and such has been no less generally the opinion of all metaphysicians than of Sir Isaac himself. Stewart, equally sensible of the same insuperable difficulty, strangely proposes to resolve all such phenomena into attractions and repulsions, upon the principles of Boscovich. This, as I observed before, is the strangest method of philosophizing, that human ingenuity ever devised: for, instead of arguing from the known to the unknown, we are desired to reverse the process, build an hypothesis upon the unknown, upon phenomena, respecting which hardly any two individuals agree, and argue from it against the known, against phenomena and causes, which even the most speculative and hypothetical have scarcely even ventured to call in question.

With respect to the Causes of Gravitation, if we had reasoned justly, and from what we knew, to what was unknown, we should never have been in-

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volved in the difficulties, with which this subject is perplexed. Let us but follow out the analogies of nature, and much of the obscurity will vanish. In *all* the phenomena, which we *really understand*, motion does not ensue, but by the communication of motion, from some proximate body; or by the exertion of a force, propagated through some proximate body, whose action is counteracted by some impediment. If we examine the bodies subject to the force of gravity, we find them, either in motion, or, in all, that are not actually in motion, we find a continued tendency to move towards the centre of the earth, and we find that this tendency in them is converted into motion on the removal of some impeding obstacle. Now if we argued, by Analogy, from similar phenomena with which we are acquainted, we should without hesitation be led to infer, that the motion is communicated to the gravitating body through some proximate substance, and

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that the tendency is derived from a stress impressed upon it, likewise through the instrumentality of some proximate substance. And this is in the true spirit of Newton's second rule of philosophizing; —'That the same causes are to be assigned to natural effects of the same kind, as nearly as may be.'

In the legitimate use of analogy we are entitled to start such an hypothesis: and it is the business of Philosophy to bring it to the test of Experiment or Observation by Induction; by which it may be confuted, proved, or limited to something less general. Now, by Newton's first rule of philosophizing, no other causes ought to be admitted, than such as are *true* and *sufficient* to account for the phenomena. The inquiry therefore instantly resolves itself into the two following. First, with respect to the causes assigned; Is there such a chain of being, or any such substance, as is supposed, in contact with the gravitating body? And

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if there be, Is there a stress propagated through that substance to it, causing that tendency, which, by experiment, we find it has? And secondly, If such causes be realities, are they sufficient to account for the phenomena?

The present state of science enables us to resolve the first of these three resulting questions at once into the Inquiry, whether there is a PLENUM or a VACUUM in the heavens? *A priori*, from analogy, we should infer a plenum, from the very phenomenon itself. Yet the notion of a vacuum has obtained such a general ascendency, and is so commonly supposed to be founded upon demonstration, that upon such analogy, in this case, it would be unphilosophical to lay even the ordinary stress. The belief in a vacuum has become an established prejudice. I conceive, therefore, that it is entitled to the privileges of prejudice: and though it is to be subjected to examination, it would be highly

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improper to lay it aside, till it be overthrown, or rendered improbable, if refutation be impossible from the nature of the case.

It is true that the Vacuum has an appearance of demonstration. But if such demonstration depend upon *hypothetical data*, the vacuum, so proved, is but an *hypothesis:* and, what is worse, it is but an *hypothesis deduced;* and is therefore liable, not only to all the individual defects of its data, and to erroneous deduction, but also to that complication of error, which may arise from the combination of two or more hypothetical data.*

The data, upon which all the demonstrations of a vacuum rest, are these—I. *The undiminished motions of the planets.* This may be granted as a fact. But even this, late observations upon the periodic times of the comets have rendered extremely questionable. Nevertheless let it be granted. II. *The Iner-*

* See p. 36.

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tia of Matter. That bodies in motion will continue to move uniformly forward in a right line, or to maintain a rotatory motion communicated to them, is also granted as a *fact:* and it is likewise granted that the more *extraneous* obstacles we remove, such as the air, friction, &c. the longer such motion will continue. But it must be observed, that all such extraneous obstacles are *consequents* in the chain of being; and, as consequents, they receive motion from, and therefore of course abstract from the motion of the projectile, which, with regard to them, is itself the *antecedent*. But whether the propensity to proceed uniformly in a right line is an inherent and independent property of matter, or whether it is maintained by any stress or action propagated through any etherial medium or *antecedent* chain of being, is a question, which the experiments, that establish the mere fact, have not the slightest tendency to determine. And

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the assumption of the Inertia of matter, as an inherent property, independent of such external action, (the only supposition that can avail for the demonstration of a vacuum,) is an assumption of the very point in question, a *petitio principii*. This, then, as one of the data for the demonstration of a vacuum, is only an hypothesis. III. Another of the data is the assumption, *That perpetual motion can only be maintained in a vacuum*. This again is an hypothesis. And it is an hypothesis deduced: and the proof of it is, That if a body be put in motion in a plenum, it communicates part of its motion to the surrounding particles; and what it communicates, it loses; and hence a perpetual motion cannot be maintained in a plenum. This is exactly the same petitio principii as the last, though in another form, involving the same confusion between the consequents and antecedents, and assuming, that such motion is not maintained by

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any external force, but that the body, as it were, runs away with the motion primarily communicated: And the whole of this deduction is in the teeth of thousands of the most familiar experiments, which daily prove, that a perpetual motion* might be preserved by Fire, Steam, Air, Electricity and other powers of nature, but for the wear and tear of the machinery, the lack of fuel, and other *extrinsic* circumstances: and this, in many instances, in spite of friction; but in all, an absolute plenum of one or

* When I say perpetual motion, of course, I do not allude to the frivolous attempts often made to produce it by mechanical combinations acted upon by gravity. As a general refutation of such schemes, it may be considered, that if there were no friction of the machine or air, Gravity and Inertia would always *exactly* produce a perpetual motion in pendulums, or combinations of machinery whose centre of Gravity is at rest; but it could produce *nothing more*, no constantly accelerated motion. If, therefore, friction is to be taken into account, it must produce *something less*: or a regular diminution of motion must be the result.

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more fluids is necessary for the production of the effect: while it is far from evident, that a man could move any one of his limbs if it were placed in perfect vacuo.

A vacuum never has been demonstrated: and if we can find no better data, from which it may be deduced, than these, it never will: for all such demonstrations are, at best, but arguments in a circle. And if we apply Newton's first rule to the vacuum, it is not shewn to be a true cause; and though, upon the assumption of the planets being projectiles, and upon the further assumption of an innate gravitating property of matter, it is sufficient to account for the astronomical phenomena; it is utterly insufficient to account for, but is directly at variance with almost all the rest.

It is scarcely worth while to notice a small vacuum, upon which, sometimes an argument is built in favour of the possibility of a larger, viz. that, which must continually occur, as an interstice between the finest atoms in nature, when they are

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in motion. Of course such a vacuum is granted, but it has no bearing upon the question. *A posse ad esse* gives no conclusion: and this gives not even a probability. Still less conclusive are several other metaphysical and mathematical curiosities of a similar description, which have been sometimes urged as arguments on both sides.

From the strong analogies of nature we should *a priori* infer a PLENUM, as an hypothesis: nor does it signify, or make the slightest difference to the propositions of astronomy, whether a Vacuum with Inertia as an independent quality, or whether a Plenum, capable of maintaining motion according to the same laws is supposed. Having obtained such an hypothesis, the next step in philosophical investigation is to bring it to the test.

First then with respect to the *possibility* of perpetual motion being maintainable in a plenum. Among the innu-

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merable and every-day experiments which might be advanced, it may be brought to the test at once, by the following decisive experimentum crucis, which I shall merely abridge, and attach to it some of the reflections of its author.*

'At the extremities of a rod of about two feet in length let two lights be suspended. Over these lights let there be two vanes fixed to the rod with contrary aspects, and inclined at half a right angle. The rod thus furnished is to be poised upon a point, supported by a foot and pillar. As soon as the lamps are lighted the machine will begin to turn upon its centre, making several revolutions in a minute, and will continue thus to move so long as the lights continue burning: and supposing the lights to have a perpetual supply, the consequence would be a perpetual motion in the machine.†

* Rev. W. Jones's Essay on the First Principles of Natural Philosophy—1762.

† I have often seen the above experiment tried

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'Let us suppose' continues the ingenious author, 'Let us suppose a philosopher to be contemplating this sight at a distance. If his eye is in the plane of the motion, the lights will appear [like two stars in a binary combination] to move backward and forward in a straight line: but as their velocity will be apparently unequal in different parts of the line, he will conclude they move in a curve: and, by considering attentively in what proportion the apparent motion is accelerated and retarded, he will discover that curve to be a perfect circle. Thus far he argues as an *astronomer* and a *geometrician*: therefore his conclusion will be undeniable: and I mention this to shew the distinction be-

with an apparatus of no greater expense than two pieces of tin, two bits of candle, and the rod of a staircase carpet.' Might not this machine be introduced with advantage as a regulating fly wheel, or even as a source of motion, in some of the delicate branches of the arts?

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tween *astronomy* and *physics*. But in the next place he proceeds to investigate the *causes* of this motion: and, having found, as he imagines, that all matter must *resist* motion in proportion to its quantity; if the lights circulate in a *resisting medium*, their velocity, he concludes, must be diminished, and by degrees utterly lost. But having observed for several days, and he might do it for as many hundred years, that they continue to move with the same velocity, and complete their periods in exactly the same time, as when he first began to make his observations, he concludes that they must move in an unresisting space: and, having dispatched all material impulses out of the way, he assigns a *projectile* force as the cause of their *progressive* motion, and an *attractive* force, exactly counterbalanced to it, as the cause of their *circular* motion, affirming at the same time that these two forces are sufficient to account for all the phenomena,

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and will do it better than *any material medium whatsoever;* and that in the whole course of this reasoning he has not *made one supposition: Hypotheses non fingo.*'

If we examine by the help of this experiment the foundations upon which, the assumption, that perpetual motion can only be sustained in a Vacuum, is hazarded—'In the first place the lamps do not *communicate their motion* to the surrounding fluid, because they were left *at rest*, and had *none to communicate.* They are no projectiles, and had no original motion independently of the air. 2dly, Instead of losing motion, they are continually receiving a fresh and equable supply: [or rather they receive the supply from the air as *the antecedent* in the chain of causation, and communicate it to the machine as *the consequent*]. For which reason, 3dly, they are not *retarded*, but are possessed of a motion, which in Theory is absolutely a *perpetual* one.

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And 4thly the well known inference from a continuance of motion is worst of all: for if the machine were placed in a *vacuum*, that is, in a space void of air, the lights would expire, and *motion* be at an end. If a projectile force were then given to the machine, without its lights, it is true that it would continue to move round in the exhausted receiver, and for a much longer time than if the receiver under such circumstances were filled with air: for the air without the lights would be but a resisting medium instead of an impelling one, a consequent in the chain of being, instead of an antecedent, and to preserve such a motion, communicated by a projectile force, the sooner it were removed the better. Cotes, and several philosophers of eminence, have been so assured of the truths of these suppositions, that they have actually given us some ingenious mathematical demonstrations, that a plain every-day matter of fact is an impossibility in nature.'

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The truth indeed is, that, from a few particulars relative to projectiles, we have skipped to a generality. This generality, thus lawfully obtained, ought to have been regarded only as an hypothesis, and like every other hypothesis ought to have been subjected to the test of Induction: but instead of so testing it, not only with regard to projectiles, but as it relates to other phenomena of bodies in motion, we have received it as a fact, applicable to every case, and founded upon it a mighty system as baseless as a dream. We have assumed a vacuum as a demonstrated and indisputable truth, and we have banished with the plenum all the mighty powers of nature, with which we are surrounded: and all the discoveries of these powers, which we have made, have been owing rather to accident than to any really scientific process of investigation.

Having thus refuted the alleged impossibility of perpetual motion existing

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in a plenum; the ground upon which the hypothesis of a plenum already stands, is preferable to that upon which the vacuum is maintained: inasmuch as it is an hypothesis, inferred directly by analogy from the known to the unknown in the proper course of philosophical proceeding: whereas the hypothesis of a vacuum is but an hypothesis deduced, its data being hypothetical, and one of them absolutely false. And with respect to all astronomical phenomena and laws, each hypothesis may be equally applicable.

In attempting, then, to establish the plenum as a truth, I observe—If Light be a material substance, it is manifest, that there is at least a *partial* plenum, both in the heavens and in an exhausted receiver. But a *partial* plenum, whose only effect could be to counteract motion, is not suggested by the analogies, but a plenum through which a force could be propagated which might act as a con-

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tinued stress or as a continued preservative of motion. Such a partial plenum, then, however it must embarrass the hypothesis of a projectile force and a vacuum, is but a very small step towards the establishment of the plenum required.

'In the year 1719, a *meteor* very far exceeding the moon in lustre, and nearly as large in appearance, was seen over all the parts of Great Britain, Ireland, and Holland, the near parts of Germany, France, and Spain, at one and the same instant of time. Its apparent altitudes were accidentally observed by skilful persons at London, Oxford, and Worcester; and near enough to the truth by the assistance of the stars. From these observations its absolute height was determined to have been above 70 statute miles high. Over Devonshire, Cornwall, and the neighbouring counties, an explosion was heard equal to a report from a broadside of the heaviest cannon at some dis-

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tance, which was soon followed by a rattling noise, as if many small arms had been promiscuously discharged. This sound was attended with an uncommon tremor of the air, and every where in those counties shook the glass windows and doors of the houses, and, according to some accounts, even the houses themselves, beyond the usual effects of cannon, when fired near at hand. It was also heard in the neighbourhood of London and beyond Lewes in Sussex. The meteor continued its course at the same height till it at length expired with a more violent explosion over the coast of Brittany. The account of this meteor was drawn up at length by Dr. Halley from the intelligence received upon the occasion by the Royal Society :* and he adds to the account the following reflec-

* Phil. Trans. No. 360, p. 978. The above description is from Jones's Essay, before referred to, slightly corrected from Motte's Continuation of Lowthorp's Abridgment, vol. ii. p. 138.

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tion—"What may be said to the propagation of sound through a medium, according to the received theory of the air, about 300,000 times rarer than what we breathe, and next to a vacuum, I must confess I know not." A similar observation might have been made with respect to the appearance of a meteor at all at such a height beyond the limits of the atmosphere.

This meteor, then, to which might be added several of a similar nature,* appears fully to establish the fact, that there is an absolute plenum at 70 miles at least above the surface of the earth. Thus far then we have established a partial plenum throughout the whole heavens, and an absolute plenum to about twice the height which the received hypothesis allows. Further than this from the very nature of the case, we can only reason upon analogy and observation. In the

* See references in page 160.

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heavens experiment is not within our reach.

It might be urged that the vacuum of an exhausted receiver, affords the foundation for an analogical argument in favour of the vacuum in the heavens. It must be admitted that it does. And if the vacuum of the receiver prove to be plenum, it must be admitted likewise, and *a fortiori*, that such a plenum of the receiver affords an analogical argument in favour of the plenum of the heavens. Let us then examine the case of an exhausted receiver.

The notion of a vacuum has so completely taken possession of the scientific world, that experiments upon this subject are extremely scarce, attention never having been properly directed to the point. Of late years, however, we have been introduced to a more familiar acquaintance with a fluid, or perhaps several fluids, more rare than air. To the Magnetic we have learned to attribute

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the Magnetic properties. Place a compass in any part of an exhausted receiver. Its natural action and the operations upon it by a magnet are in no wise interrupted by such a vacuum; whence it is clear, that, at least, the magnetic fluid, whatever that may be, pervades every part of this receiver; and not only the chain of being, but the chain of action is propagated through it. Divert the northerly position of the needle with a magnet, and let it return. Whence does it receive its motion? By several experiments with the thermometer and other instruments, we find such an exhausted receiver is replete with Heat* as well as with Light, and with the Electric and Galvanic fluids, and this not in a diffuse and scattered manner, but in every part and point subjected to human observation. And it is of little consequence which hypothesis we adopt as to these

* See Newton Opt. 18th Query.

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phenomena of Heat, Magnetism, and the rest, for if the hypotheses be rejected, which maintain them to be one, or to be distinct fluids and substances, the hypothesis, which would resolve them into motion only, answers the purpose of proving that the receiver is not a vacuum just as well, for these electric or any other motions, as we well know, cannot be propagated but through some substance moved, be it subtile medium or the grosser particles of bodies.

Again, if an elastic fluid, such as air, be projected into a vacuum, or into such a space as is only partially occupied, or occupied only by a rarer fluid, (under one or other of which denominations we must place an exhausted receiver, if it be not a plenum,) we find by experiment that it will not pass through such a space in a defined column; but, by its elastic force, immediately expands itself to every part of the receiver: nor will it pass to any distance, unless it is confined in the

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column by a surrounding medium of about its own specific density. Light and Electricity are even more elastic than air. But when they are projected into an exhausted receiver, we find that, instead of expanding by their elasticity, they pass directly through it, in a condensed column. From this experiment we can draw but two conclusions. We must either conclude, that the space through which these columns pass, is not a vacuum, nor any part thereof, but that the whole is occupied by a fluid, at least about as dense as the projected column;* or we must conclude, that such fluids as Light and Electricity are not elastic. Upon the former of these conclusions the exhausted receiver is a plenum: and the latter makes a more fatal inroad among the qualities, and as applied to any of the hypotheses of light in the former experiments, involves within itself the

* For this experiment see Jones's Essay before referred to.

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most complete refutation of the heavenly vacuum, that can be desired.

Carrying with us this analogy into the heavens; if they are but a vacuum, how comes it that the solar light glances along the edges of a planet, leaving behind the planet such a defined and extended shadow as is apparent in eclipses? It is not conceivable that such an elastic fluid as light would pass by such an empty space, without filling it by its immediate expansion. Whether we assume the hypothesis of Newton, or that of Huygens, with respect to the nature of light, or combine them both, the consequences involved are as absolutely conclusive of the plenum as any analogical argument is capable of being.

Sir Isaac Newton directs our attention to the following analogy upon the ascent of a comet's tail to the higher regions of the heavens.* 'Smoke ascends in a chimney

* See Jones's Essay, p. 121.

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by the impulse of the air, in which it floats. The air, rarefied by heat, ascends on account of the diminution of its specific gravity: and it carries off the smoke entangled with it. Why may not the tail of a comet ascend from the sun after the same manner?'* It is a fair and obvious analogy; and if it accounts for the ascent of the comet's tail, it leads us directly to inference of a plenum, instead of the inferences which Kepler or Sir Isaac would deduce. The smoke and vapour from the fire do not ascend because they are carried up by the light, but because they are more rarefied than the air descending to the earth and fire. If, then, we strictly follow out the analogy, we must infer, not that the tail of the comet is carried up through vacuum by the

* Ascendit fumus in camino impulsu aeris cui innatat. Aer ille per calorem rarefactus ascendit, ob diminutam suam gravitatem specificam, et fumum implicatum rapit secum. Quidni cauda cometæ ad eundem modum ascenderit a sole.—*Pr.* 514.

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light, but that the tail and light ascend together by the descent of some denser fluid towards the solar fire. And this is the more particularly decisive, when we consider, that the sun itself is the great centre of gravitation; and that the only philosophical account, that can be given of the ascent of any such body, is, that it is the well known consequence of the descent of some denser fluid or substance towards the centre of gravitation.

Lord Bacon, cautious as he was with respect to every hypothesis, decidedly and unhesitatingly maintained the plenum. Every analogy in nature leads to the same inference: and the few experiments and observations, that have hitherto been directed to the point, go far to convert that inference into a conclusion. If it be thus suggested as an hypothesis, it is the duty of philosophy to test it. And if it shall be hereafter admitted as a reality, the great chain of being is supplied, which is requisite to

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unite the different, and often apparently conflicting phenomena of Physics with each other in one connected system.

The same analogies, which suggest a plenum as the connecting chain of *being*, suggest likewise a continued stress impressed upon the plenum, and everlastingly maintained by its Creator, as the chain of *action*, to which the motions and powers of nature must be referred.

Having started such an hypothesis, if we pleased, we might amuse ourselves, with respect to Gravity, by calculating, upon our present theories of pressure, what would be the effect, upon two independent solid bodies, placed in a plenum, affected on all sides with a continued strain. We might perhaps arrive at the conclusion, that, each intercepting the strain from the other, a mutual gravitation would ensue. We might also attempt to calculate the laws of such a gravitation; and, if our theories of pressure had been well established by Induc-

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tion, such a calculation would at once bring the hypothesis to the test, and determine whether it were sufficient or no to account for the phenomena. But, unfortunately, those, which we call our theories, are one of the most deficient branches of philosophy, raised upon very partial inductions, and are only hypothetical systems. As we have not the data, upon which these calculations can be made, such a proceeding would be no better than ingenious trifling. Our only resource, then, is to bring it to the test of Experiment; and, what would be the effect, it is not in our power *a priori* to decide. Experiments for such a purpose may easily be devised. But in this treatise it is not my intention to follow up, by such experiments, the suggestions which the present state of science enables us to propose. Nor should I have said so much upon the vacuum, but that the prejudices of the philosophical world lie so strongly in the opposite direction, that

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the doctrine of a plenum has never yet had an impartial examination: yet I humbly conceive, that this notion of a vacuum is the main obstacle to the introduction of a new era in science, and even to its completion in the ascending scale.

Here it might be required—Upon the hypothesis of a plenum how are the celestial motions to be accounted for? If, by such a question, a complete explanation of the causes, which maintain those motions, be demanded; it is a demand for an hypothetic system, and mere trifling. Galileo, Kepler, and Sir Isaac Newton, have ascertained the *laws* of the system of the universe. These laws are admitted by all: and thus far there is neither question nor dispute. The next object is to ascertain the *causes*. And of these, almost all men, whether they believe in the hypothesis of a plenum or of a vacuum, profess themselves in equal ignorance. Such, as presume in the

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present state of science to any real knowledge of the causes, only display that ignorance the more, by proving that they do not even comprehend what is the subject under consideration.

To the causes, then, we must inductively ascend step by step. The first and fundamental question in this new inquiry is, whether there is a plenum or a vacuum. Two opposite hypotheses are started. And, until one of them is actually proved, all further proceedings must necessarily be purely hypothetical. To explain the phenomena upon the hypothesis of a vacuum we must graft upon it two more hypotheses, viz. the Inertia of Matter as an *inherent quality*, and Gravity likewise as an *inherent quality*. To explain the phenomena upon the hypothesis of a plenum, we might in like manner graft upon that assumption two more hypotheses; one to account for the continuance of the motion in a right line, such

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as the hypothesis of Aristotle, that a stream of air follows* a projectile, or a stream of ether, or of electricity, or the like, maintained by a continued external stress upon the fluid; the other to account for the gravitation of one body to another, such as intercepted pressure, or intercepted stellar rays, or some such hypothesis as has been founded upon the circumstance that the circle of illumination on a body enlightened by the sun varies inversely as the square of the distance, or that the action of the electric fluid varies according to the same laws, or any other of the numerous hypotheses, that have been suggested. But in both

* If the arm be bared and whisked swiftly through the air, the action of the air behind it, and apparently impelling it, is far more sensibly felt, than the resistance in front of it. It might be a question, by how much the resistance exceeds the impulse? and whether such impulse be in fact aerial or etherial? It is evident, however, that the supposition of a vacuum behind a projectile is only an hypothesis deduced.

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cases it is only laying one hypothesis upon another, a method of proceeding not to be admitted. The first hypothesis must be converted into a conclusion, before we can legitimately proceed. If, however, we use the terms Inertia, Gravity, and the like, only conventionally, to express the unknown causes of the phenomena, all is right. And every dispute, that can arise, will be a disputation upon words, and not upon things: and it may be immediately settled, by a demand for the definition of the terms employed.

I might adduce some curious observations, I have met with, to show that the Attraction of Cohesion, as well as all the phenomena of Repulsion, might also be resolved into this continued strain, impressed upon the etherial plenum. But such a course would be also deviating into the regions of hypothesis and placing one hypothesis upon another. It may, therefore, be sufficient, here, to obviate

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an objection, upon which some stress has been unnecessarily laid. If we examine any solid body, we find it is constructed of independent particles, but loosely as it were, and permeated by pores, through which such a fluid, or it may be motion, as the electric, flies almost uninterruptedly: and, if these pores be pervaded by the supposed etherial fluid, a strain, operating upon that fluid, would not act upon the surface of the body, as Sir Isaac Newton suggests, but on its internal structure, and upon every particle which composes it. But whether it would operate to its dissolution, or to its cohesion, and gravitation to any other body directly as its mass or as its surface, is not matter for our mere conjecture, but is a subject for experimental examination.

Upon the other Powers of Nature I shall say but little at present. It is well known to Mechanicians, that man cannot

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increase his power, by any combination of Machinery, save only as by such means he can bring his force to bear more regularly and uninterruptedly. What he gains in power, he loses in time. And if by the aid of simple machinery he can raise an undivided ton in 5 minutes to the height of 20 feet, he could raise a quarter of hundred weight to the same height by his unassisted power in 1-80th part of the same time. How comes it, then, that he is enabled to construct machinery, by which he can produce effects far beyond all human power? It is thus. By various contrivances and combinations he is enabled to press into his service powers, that are not his powers—forces with which he is surrounded, and which are at his bidding in every place and time. The powers supplied him are not created nor increased by his machinery, but are supplied indefinitely to the exertions of his skill. Knowledge is indeed power, in-

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asmuch as it enables its possessor to bend to his will powers superior to his own. And the extension of knowledge has given to this kingdom in particular a supply of force unequalled by any nation upon earth.

Again, If we examine some of the common operations of nature, over which man has little or no control, we find new forces and movements introduced, unaccountable upon any of the received systems of philosophy. Wherever a fire is lighted, a wonderful kind of motion commences among the elements, very different from what can be supposed to have been communicated by the agent that produced the spark, or could have resided within the spark itself. Light issues on all sides from the fire, and an incessant draft of air sets into it; and there ensues a motion continually accumulating and increasing, and communicated to the objects around it; and instead of losing motion by such communication, the

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longer it continues the more violent, intense, and extended it becomes, producing such a variety of movements by the descent of walls and timbers, by the overthrow of houses, trees, and all obstacles within its reach, as to bid defiance to all ordinary rules of action and re-action, cause and effect: 'and no man knoweth whence it cometh, or whither it goeth.'

To the explanation of such phenomena as these, our laws of motion are utterly inadequate: and in every attempt we feel ourselves beyond our depth. Not that these laws of motion are overthrown so far as they relate to projectiles and the like; for, with respect to them, they are founded upon Induction. And when we shall have advanced into these higher regions of philosophy, I question not, but that their empire will be extended, so as to embrace these phenomena themselves. Or perhaps some more general laws of motion will be discovered, which will

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comprehend the present under them, in like manner as the law of gravity, constant upon the surface of the earth, was nevertheless, by the extension of science, comprehended under the more general law of its inverse variation.

That, in a great multitude of instances, new efficient forces are introduced is very evident. We may satisfy our immediate purposes of use and language by calling them the Powers of Elasticity, Expansion, Inertia, and the like: but the question still returns—Whence are these forces proximately derived? Stewart* has enumerated the following hypotheses, which have been started for the solution of this question.

That the phenomena of nature are the result of certain active powers essentially inherent in matter. This doctrine is commonly called Materialism.

* See his Outlines, p. 184, and also his Appendix to the first volume of his Essay on the Active Powers.

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That they result from certain active powers communicated to matter at its first formation.

That they take place in consequence of general laws established by the Deity.

That they are produced by a vital and spiritual, but unintelligent and necessary agent, created by the Deity for the execution of his purposes—the hypothesis of Cudworth, which he attributes to Plato and Aristotle.

That they are produced by mind, connected with the particles of matter.

That the universe is a machine founded and put in motion by the Deity; and that the multiplicity of effects which take place may perhaps have all proceeded from one single act of his power.

To which he adds the following, which he maintains, That the order of the universe is not only at first established, but, every moment, maintained by the incessant agency of one supreme mind: which

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doctrine, says he, does not exclude the possibility of the Deity's acting occasionally by subordinate agents or instruments.*

That the powers of nature are powers independently inherent in matter, none but the materialist maintains: and we must admit them either immediately or ultimately to be the result of some spiritual agency. To pass over such of the hypotheses as no one now maintains, the inquiry resolves itself into the following—Whether, in the present constitution of the world, the spiritual agent acts directly by his immediate power, or by secondary causes.

That subordinate material instruments are *occasionally* employed is manifest to every observer every moment of his life. Upon the notion of a vacuum and the impressed or inherent qualities, it is equally manifest that secondary causes cannot be *universally* instrumental to the

* Page 185.

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phenomena. Upon this system, then, as proposed by Stewart, we either miss the real question entirely, or we are driven to conclude, that the operations are conducted, partly by secondary causes, though chiefly by immediate influence. Thus, for instance, when the twig of a tree is bent by the *wind*, and recovers its former position by its *elasticity;* the first operation is performed by means of secondary causes, the other by the immediate interference of the Deity: and if a perpetual vibration of the twig is kept up, it is kept up alternately by the one and by the other. Again, in the working of a steam engine, the pressure and operations of the water, the air, and the different combinations of the wheels and machinery attached, are secondary causes, acted upon, and acting upon each other, according to mechanical laws and principles: while the *gravity* of the piston, the *elasticity* of the steam, and the *inertia* of the fly-wheel, are the

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result of the immediate interference of the Deity, likewise acting according to mechanical laws. And upon this supposition of *immediate* interference and control, we are urged to conceive, that we ascribe unto the Lord a mightier display of majesty and power, which cannot fail to impress a more devout dependence upon him, as our Ruler and Creator. We ascribe unto him however a broken, confused, and disjointed production; and such an hypothesis, as I before observed, has been almost universally rejected by the ablest metaphysicians upon the a priori argument of Causation. Alphonso, King of Spain, would probably have received it with the same sarcasm as he used toward the Ptolemaic hypothesis of the universe. The implied censure of Newton rests upon it. But it has been more sternly reprobated by that great philosopher, whom we justly venerate as the father of modern science, whose enlarged views and chastened wisdom, in

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every thing which concerns this branch of philosophy, have been most lamentably overlooked. "Certain it is," says Lord Bacon,* "that God worketh nothing in nature but by second causes; and if they would have it otherwise believed, it is mere imposture, as it were in favour towards God; and nothing else but to offer to the Author of truth the unclean sacrifice of a lie."

Of the Force of Animals, it may well be questioned whence it is derived, whether it be originally communicated by the Soul of the animal itself to the material world through its connexion with the body, or whether the soul has power only to influence and divert the motion and force, with which that body may be surrounded. No part of physical science is involved in such obscurity. "I will to raise a weight," says Dr. Reid,† "and

* Advancement of Learning, page 12.

† Active Powers, 109.

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no sooner is this volition exerted than the machinery behind the curtain falls to work, and raises the weight." This is well nigh the sum and substance of all we know about the matter. The Galvanic powers and structure of the brain, alluded to by Dr. Arnott and Sir J. Herschel,* have a tendency to show that the mere animal motions are conducted upon the same principles as is the other mechanism of nature, whatever may be the influence, through which the soul operates to govern and promote its action.

To the ancients, who held the World to be their God, Matter its body, and the Etherial powers of the heavens its soul, little difficulty could occur in resolving the motions and forces of the elements and gravity, as well as all individual animal force into the powers of this present universal Deity. By such a solu-

* See also Aristotle, VIII. Phys. 2. 6. and his treatise De Motu Animalium, and III. De Cœlo 2.

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tion, it is true, they completed and perfected their bastard system of Physics; and reduced all causes to one simple triplicated chain: and the Efficient, the Formal, and the Material, might be successively traced from the highest intellectual operation to the lowest sensible phenomenon.

To us, however, who hold the Spiritual world perfectly distinct from the Material, it must be the grand object of philosophy to trace the chain of causes from matter to matter, to the first of secondary causes. At these secondary causes, previously to the great reformation of their religious systems, introduced shortly before the time of Pythagoras, the earlier nations of the world unfortunately stopped, nor raised their minds above the material system of the universe. They appear originally to have been acquainted with revealed truth, and by the refinements of philosophy to have fallen into materialism, and naturally and gradually

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to have descended to the grossest depth of atheism and idolatry.

It is well observed by Lord Bacon—That it is "an assured truth and a conclusion of experience, that a little or superficial knowledge of philosophy may incline the mind of man to atheism: but a further proceeding therein doth bring the mind back again to religion: for, in the entrance of philosophy, when the second causes, which are next unto the senses, do offer themselves to the mind of man, if it dwell and stay there, it may induce some oblivion of the highest cause: but when a man passeth on further, and seeth the dependance of causes and the works of providence; then, according to the allegory of the poets, he will easily believe that the highest link of nature's chain must needs be tied to the foot of Jupiter's chair." Natural history leads us to the contemplation of the wisdom and goodness of the Almighty: and Causation directs us to a

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perception of his power; to regard this universal frame, with all its myriads of worlds, as one connected whole, and as it were his footstool, bearing upon it the continued impress of his might.

Such is the hypothesis upon the construction and the powers of the universe, which I would venture to suggest, or, with greater propriety I would say, to revive. That all physical force is proximately dependant upon the powers of the heavens, and that they consist of a plenum, is no new hypothesis, but as old as Heathenism itself: and the hypothesis properly modified, I believe, is even of still higher antiquity. Yet it is advanced, not as a system to be believed, but as an hypothesis to be tested by Induction. In England, every such hypothesis, of late, has generally been passed by unnoticed, and unworthy even of examination, upon the idle unfounded supposition, that the Vacuum has been demonstrated in the Principia of Newton, and that the Ple-

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num runs counter to the mathematical principles of the Newtonian philosophy. It is a fallacy, however, by which, few of the most celebrated philosophers have ever been misled: and unhesitatingly they have received the *laws* of gravitation, announced by Newton, without in any manner abandoning their speculations upon Causation.

We profess to follow Bacon, we admit his principles and experimental *method* to be correct, and we desert him in the very next step, upon Causation, that is to say, upon the *objects*, to which our attention should be directed. He argues justly, from what he knew to what was unknown, and arrives at the same *result* as did the ancients, that the Heavens are a plenum, and that all the operations in the world are conducted by the Almighty through the instrumentality of second causes. Modern philosophers generally maintain a position directly the reverse.

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It is not for any one at present to venture a decision on the question: and herein I have but endeavoured to bring the subject more fairly before the world. And Time will shew, whether this, which is held to be the weak part of Bacon's philosophy, is weaker than the rest.

The origin of motion and force is one of the grandest physical problems that ever engaged the attention of philosophers. Perpetual motions acting in any system must influence all things within their reach: and from them secondary motions must in a great measure, or at least in some measure be derived. All motions imply force: and such force must be derived ultimately or immediately from a spiritual agent. It was a favourite problem among the ancients to distinguish the primary from the derivative motions, and to ascertain at what parts of the system the spiritual forces were applied.

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The hypothesis and opinions of celebrated men upon such a question, however wild and vague, are not unworthy of consideration. Many, like Descartes, have conceived that a certain quantity of motion was originally communicated to the world; that no part of it was ever lost; but that it was bandied from one portion of matter to another in an eternal succession.

I omit further mention of the speculations of Cudworth, Berkeley, and of some eminent philosophers, ancient as well as modern, who have taken singular views upon the subject, as their speculations have been frequently and fully examined, and have been the subject of much controversy among metaphysicians, and their attendant difficulties ably pointed out.

Lord Bacon, as a strenuous advocate for the plenum, has forcibly directed our attention to several curious phenomena, connected with the preservation and origin of motion, which unfortunately

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have never received that consideration from the philosophical world, which the suggestions of Lord Bacon of right demand, and usually obtain.

If we pass on into antiquity, in the writings of Aristotle we find a clearer and a steadier light. He connects the problem at once with Causation: and from a very extensive induction and examination of the opinions of preceding philosophers, he presents us with the two chains of *Being* and *Motion*,* as the proper objects of physical investigation. He derives the chain of motion proximately from the Heavens, which, in common with almost all the heathens, he regarded as a vast, incorruptible, and ever circulating God: but through the intervention of this deity, he derives it ultimately from the immoveable first

* He does not, that I am aware of, make any distinction between the Dynamical and Statical forces, both which I have comprehended under the term *action* as a generic word.

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principle of all things. And he conceived that it was applied at the circumference to revolve the sphere: while many others, as he informs us, imagined that it was applied at the centre. Plato has handed down to us much the same conceptions: but he has not entered so fully into the discussion of the chain of action. Both Plato and Aristotle, however, appear to have derived their notions chiefly from the Pythagoreans,* who imported them from abroad. It is true that Aristotle is inclined to claim for himself the discovery of the causes upon the induction, which he has given. Yet his arguments, as well as those of Plato, on these and very many other subjects are so inconclusive, with so many omissions of the intermediate steps, in the natural progress to such generalities, which appear to have been, to them, unnoticed

* The Pythagoreans, however, conceived it was applied at the centre.

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and unknown, and which have only been supplied by the science of modern times, that the conclusions seem rather to be the broken fragments of some earlier connected system than any inventions of their own. And if we had not been acquainted with the fact, that they had largely borrowed elsewhere, we could hardly have given them credit as the original inventors of such speculations as are to be met with in their writings.

With their philosophical speculations, the Heathens invariably blended their theology. I have elsewhere collected the fragments, and endeavoured to trace the changes and modifications, which took place in the philosophical and theological speculations of the higher ancients. Nothing perhaps is more uniformly insisted upon among them than the plenum, and divinity of the heavens, and that the first great moving principle of the universe sprung forth from them. In the beginning were the

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Ether, and Chaos, or, in the language of the philosophers, Mind and Matter, which were regarded as two primeval, eternal, and independent principles, the first of a vivifying and intellectual nature, the other, a watery chaos, boundless and without form; both which continued for a time without motion, and in darkness. By a mystic union of the two was formed the great Pantheistic deity, the One, the Universe itself; of which the Chaotic matter presently became the body, and the Etherial Intellectual principle the soul. At the commencement of this union, from the Ether sprung forth the Triad, Phanes or Eros, a triple divinity, the most prominent character of which was Light. He organized and completed the fabrication of the system, and, at the conclusion of his work, he became the sun, thenceforth the Soul and Ruler of the world. The primeval Ether and a triad of three distinct and coequal powers or persons, concentred in the sun, cor-

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responding in their human character to the great Patriarch of mankind and his three sons, appear not only from the fragments, which have reached us through the medium of the Greek language, but from the Hindu, Peruvian, and many other independent mythological sources, to have been the original Monad and Triad of the Gentile world. An examination and comparison of the different systems show, that the persons of this solar triad, viewed under a physical aspect, were regarded as the Fire, the Light, and the Ether, three conditions of one and the same etherial fluid substance of the heavens: while in a metaphysical aspect they were commonly conceived as certain attributes of the Supreme mind, and were variously combined as the Principle of action, Power, or Will, the Intellect or Reason, and the Spirit of the world; accordingly as the prior Monad was contemplated, physically in its Etherial, or metaphysically in its Intellectual subsistence.

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The constitution of this triad of the Sun, as the secondary origin of motion to the system, scarcely enters into the subject of the present inquiry. But as we have arrived, by a very different path, to nearly the same hypothesis, which, in his excentric speculations, was maintained by Hutchinson, as the physical system of the Scriptures, it may not be amiss to say some few words upon it, as a subject of curiosity, which, in the earliest ages, appears to have been maintained as a fundamental tenet of a mighty system of speculation; traces of which are to be found in the antiquities of every nation upon earth.

Neither Hutchinson nor any of his followers seem to have been aware, what strong confirmation of their hypothesis, in this particular, is to be found among the relics of the earlier Gentile world. And he appears to have fallen into the very same mistake, which originally tended to mislead, and plunge the nations into

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materialism, and the worship of the heavens, in that he resolved the strain upon the heavens, and all the derived force in the universe, into the expansion caused by the motions of the solar triad. And he regarded the world as a machine, originally constructed and set in motion by its Creator, and thereafter left as a self-acting and independent combination, whose powers were concentred in the sun; instead of reversing the hypothesis, and resolving the motions of the solar triad, and of all the mundane operations, into the force upon the plenum, originally impressed, and still maintained by, and dependent upon, its Creator. The system of Hutchinson has long since passed into oblivion; or is remembered only as an ingenious speculation. The discovery of the bases and component gases of the air overthrew its fundamental tenet, that the Fire, Light, and Air, were only different appearances of the same etherial substance. Yet, from the resemblance

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of the Sun to common fire, and the discovery of the chemical union of the bases of the air with those of the consumed fuel, in the process of combustion, evolving water, and carbonic acid gas, accounting *accurately* for all the materials, except the ether of the gases lost or destroyed, and the light generated or thrown off, leaving these as residual phenomena, perhaps convertible into one another, I conceive that the substitution of the word Caloric or Latent Heat or Ether, for Air in that hypothesis, or it may be only the converging force converted at the centre into that diverging motion which may be light, would suggest a modification right well worthy of attention. Many, however, are the steps, which must be proved, before this part of the subject can even be legitimately approached. By all such speculations we are only tacking one supposition to another, and weaving but an hypothetic system; using analogy not in its legiti-

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mate province, but, as Lord Bacon calls it, for the purpose of anticipating nature; and running into the common error of the ancients, of proceeding from one step to another without stopping to prove our progress.

Upon the Metaphysical triad of the ancients, most probably derived, at least in part, by analogical reasoning from the contemplation of the human mind; and upon the divisions of the mental powers which have obtained among philosophers, I would make some few observations.

Metaphysicians have at length approximated to a truth, which, in the Metaphysics of Christianity, is laid down with as much perspicuity and decision, as is the Immortality of the Soul, or any other of those points which have been so continually agitated among philosophers, modern as well as ancient. The distinction between the Intellect, and the Emotions or Affections, to which, simple

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as it may appear, such laborious approaches have been made through the mazy paths of Metaphysics, is clearly drawn in the Scriptures; and the respective seats of them are assigned, it may be figuratively, but most naturally, to the Head and Heart:* and to the heart the Scriptures most constantly appeal, as Religion is rather directed to the Feelings than to the Understanding.

The old division of the Mental Powers into those of the Will and the Understanding, has long been superseded by the division of the school of Reid, into the Intellectual and Active Powers. But, under the name of the Active Powers, are comprehended the Will and some

* The Faith mentioned by St. James is evidently the mere opinion or belief, which arises upon the conviction of the Intellect alone. Nor does it become the justifying faith, insisted upon by St. Paul, till this belief is enlivened by the Affections of the heart. When the Head and Heart concur, the Works of the whole man must of course tend to one and the same object.

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part of the Emotions: while the more refined Emotions, and the complex Intellectual and Emotional Feelings have been confounded with the Intellect; an error, which likewise runs through the writings of Kant, Plato, and many of the ancients. Metaphysical science is greatly indebted to Brown, for having so forcibly directed attention to the distinction between the Intellect and the Emotions; but, in common with later writers, he appears generally to regard the Will as a subordinate appendage to the Emotions, connected perhaps with the material structure of the animal.

There is an ambiguity in the words Will and Volition. The Will may be divided into the general capability of *Wishing*, and into the general *Power of acting*; the Volition into the particular *Wish*, and into the particular exertion of the *Power*.* The Soul *thinks, wishes, acts;*

* Dr. Clarke draws a distinction somewhat similar. "But it plainly appears to me, that there

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and the Power to act appears to me to be a mental Power, as distinct from the Wish or any of the Emotions, as it is independent of any material structure or combination. We may conceive a disembodied spirit with the Intellectual Powers, the Train of Thought, only, without the Emotions; and again such a spirit, with the Intellect and Emotions, without the Power of action: and such

is an error which lies under the word Volition. Under that term you include both the *final perception* of the Understanding, which is passive, and also the *first operation* or exertion of the Active faculty or Self-motive Power. These two you think to be necessarily connected. I think there is no connexion at all between them: and that in their not being connected lies the difference between Action and Passion; which difference is the essence of Liberty." *II. Letter to a Gentleman*, p. 410. Here the Active faculty or Self-motive Power is distinguished from the Intellect: but no notice is taken of the Emotions: yet it is most questionable, whether the Self-motive Power is ever exercised without the intervention of some Desire or Emotion.

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a being might be susceptible of every sentiment terminating in contemplation, such as all intellectual Tastes, Memory, Regret, and a variety of others. Stewart, in his speculations upon persons dreaming, supposes the Intellectual Powers with the Train of Thought in exercise, while the Active powers are suspended. But, of the Faculties which are confounded under the name of Active Powers, it is manifest that the Emotions are not suspended: and, though the voluntary Power over the material frame is very generally unexerted during sleep, it is a very singular phenomenon, that when the Wish or desire itself to do any particular action arises, the Soul presently takes it for granted that the deed required is actually done; and the train of thought is influenced and diverted though the power is not exercised; and, though the wish is not really gratified. And there is nothing more common in nature than to have the wish without

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the power to act, or the power without the wish.

That animal motions are in a great measure carried on by the mechanical powers of nature, supplied externally to the occasion, is highly and extremely probable: yet at the same time it is evident that the soul must exercise some *Power* of action distinct from the desire, however hidden and mysterious it may be: and that Power of action, whatever it is, I conceive should be ranked as a distinct division of the Faculties.

It is ably shown by Brown, that to the Power of action in the human frame, we are indebted, as to another sense, for our ideas of Causation, which is, as it were, the object of that mental faculty; as Science is the proper object of the Intellect and Head; and Religion and Ethics of the Feelings and the Heart; while what we distinguish, as Sensation, is but the *internal* feeling of the mind, when excited by some *external* cause.

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If we look more closely into the construction of animal bodies, we may observe in their involuntary motions, and a variety of other phenomena, something of a material or corporeal spirit or frame of life, acting independently, though occasionally influenced by the immortal soul. It is common also to vegetable beings: and its operations appear to be carried on solely by the powers of nature through the instrumentality of the Sympathetic nerve. Many philosophers have attempted to account for it by a secondary soul, as did Plato; others by a plastic nature, or by the immediate interference of the Creator. But analogy seems to direct us to seek it among secondary causes only; and would lead us to the inference, that *Nature*, with all its powers, is no other than this Machine of the universe, for which it is but a name, a machine wonderfully and fearfully contrived, whose action, motions, and forces are preserved by the continued

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impress of Almighty Power. To this beautiful and wonderful combination of the material frame, not only of the universe, but of all the organic bodies it contains, carried on apparently with so little of external aid, is to be attributed much of that materialism, which is to be met with among men, of some philosophical pretensions indeed, but whose views are so warped by the pursuit of one particular branch of science, as to rest solely in the secondary causes first presented to the senses, without lifting up their eyes to comprehend the higher and more intellectual bearings of philosophy.

Upon the metaphysical speculations, drawn from the material world, and upon the proper use and abuse of Analogy in that respect, I would make some further observations.

Of all arguments whatever, the most dangerous are those, which are deduced

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by analogies drawn from the material to the mental world; between which there is no natural similarity. Mind and Matter, in their *substances* are equally to us unknown; and in their *qualities* or properties, if we may justly apply such terms to mental phenomena at all, they are the very reverse of one another. What similarity can possibly be traced between the solid, extended, tangible, visible, divisible, inert, and moveable masses of matter; and the invisible, unextended, impartible, ever-active, and probably immoveable essence, which we conceive under the name of mind? When, therefore, we reason analogically from one to the other, so far from arguing from like to like, from species to species, we argue not even from genus to genus in the most remote degree, but from one thing to its contrary. Is it then at once to be acknowledged, that no analogy whatever can be sustained between them? The experience of every moment tells us

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that this is not the case: for, though it is most true, that they exhibit no similarity of substance, form, or quality, yet, strange as it may appear, there are nevertheless the strongest analogies upheld between them. And it is upon these analogies, that some of the most important interests and speculations of the human race depend. "The analogy of the material world," says Sir James Mackintosh, "is indeed faint, and often delusive, yet we dare not utterly reject that, upon which the *whole technical language* of *mental* and *moral science* is necessarily framed."* All our *ideas of sensation* are necessarily derived from the Sensible world: and in the language of its images are all our mental speculations clothed. We might indeed have gathered up *metaphysical notions* from mental contemplation and analysis; but unless we expressed them in the language of *physical ideas*, and of the ma-

* Dissertation, 406.

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terial world, we should have been altogether unable to converse upon such subjects. Had there, then, been no kind of similarities between them, the most important subjects could never have been disseminated amongst us: and, unless a different constitution had been provided us, we must for ever have remained in the deepest ignorance of the great ends and objects of our existence.

It has not unfrequently been a puzzling question to philosophers to account for this strange paradox, of such striking analogies as are presented between these two great classes of subjects, the most unlike in nature, and the very opposite of one another. I would venture to suggest that this apparent anomaly takes its rise from inattention to the subject of Causation, and its two distinct chains of *Being* and *Action*. Between the mental and material *Beings*, it is true, that no similarity exists; but between the chains of mental and material *Ac-*

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tion, between their Adjuncts, Relations, and Circumstances, the most striking resemblances must be acknowledged. Nor do these Resemblances appear to be accidental; but rather to be thus adjusted and contrived by the Creator, for the purposes to which they have been so universally applied. Force, Motion, Place, and Time, have precisely the same relation to Matter, as Power, Change, Coexistence, and Succession, have to Mind, and, as it were, typify each other to our comprehension; whilst all the relations of Number are equally applicable to both.

We talk justly of *analyzing* and *combining* ideas; for, as we must express ourselves in some material images, the language of Chemistry is perhaps the most adapted to explain our sentiments. Moral qualities are said to excite our moral feelings of disgust or approbation, pain or pleasure, as the same feelings are actually excited by the physical qua-

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lities of the bodies with which we are conversant. But it is in the unceasing agency, exerted by external causes, in the continued action by the powers of nature upon our bodies, maintaining their life, and functions, and involuntary motions—and in the unceasing, ever-flowing train of thought and feelings in our souls, maintained in like manner, independently of our will, we know not how, but it must be by some spiritual and not mechanical agency, that the closest similarities are to be observed. Nor are such similarities to be traced only in the individuals; but perhaps more decidedly in the great continued chain of external action, by which each individual is connected with each of its own world.

The independent chains of mental and material successions of action appear, as it were, continually to come into contact, yet never cross. When a clock has struck, a material movement is conveyed along the auditorial apparatus to the

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sensorium; and according to other systems besides those of the materialists, *motion* is communicated to the soul itself. Yet analogy, I may say experience upon all natural bodies, would lead us immediately to presume that the motion, after a momentary concentration in the sensorium, is again communicated through the brain and skull to the surrounding air, and that no part of it can be lost to the material world by being communicated to the immaterial. Through our sensations the internal train of thought is continually varied by the external chain of action: and through our mental power the external chain of action is influenced and diverted in compliance with our inward thoughts and designs. And by means of this subservient chain of material action our communication with each other is upheld.

Yet by such analogies, how often are we led astray! We talk of being acted upon by motives, as by weights in a

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balance. We *ponder*, we *weigh* arguments, we *balance* objections, and we *decide*. In these instances we do not speak improperly; yet, if, by such language, we are led to fancy, that the mind, which weighs, is to be compared with the balance itself, instead of with the person, who holds the balance and judges of the operation of the weights;— if we are led to imagine that the same irresistible influence is exerted upon our minds, as is exerted upon the scales; we use analogy, not in its proper sphere, as the mere *suggestion* of a probability, but as a *proof:* and we wander still further from the path, and conceive a similarity, where none exists, comparing the weight itself a *material being*, an *antecedent cause*, with the *Motive*, no being at all, no antecedent cause, but a mere *object*, a *final cause*, which some spiritual agent or *antecedent cause* proposes to compass or avoid. Yet it is to this favourite and fallacious argument, that the assertors

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of the philosophical scheme of Fatalism and Necessity have most commonly recourse: and chiefly upon such grounds as these are our Free will and Responsibility denied.

Analogy, as an instrument of *proof*, is feeble, and never to be relied on: as an instrument of *invention*, founded upon similarities, suggesting probabilities and hypotheses, it is the very right arm of science: and as a weapon of *defensive argument* against the sceptic, it is one of the most powerful that was ever wielded. In its first capacity, unfortunately, it has been but too generally used; in its second, almost wholly overlooked; but in its third, its powers and temper have been most ably proved in one of the first metaphysical works in the English language, Butler's Analogy.

The analogical arguments of Butler are unanswerable. If such and such particular circumstances occur, or are

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permitted here in the material world, God's book of nature, why should we object to similar apparent anomalies in the moral: or why should we think certain truths in God's book of Revelation too hard for us, when we behold them, typified before our eyes?

> If plagues and earthquakes break not heaven's design,
> Why then a Borgia or a Cataline?

If the Chrysalis, having put off the earthy existence of the worm, is raised to an aerial and more glorious life: why should not this corruptible put on incorruption, this mortal, immortality? Where is the stumbling block to the resurrection of the body?

If the slightest incident occurs not in the material world by chance; but the causes of its occurrence may be traced in the great chain of universal guidance; if every flower of the field is reared by second causes, nor broken but by direction—Is it to be supposed that war, and

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pestilence, and suffering, are loosed upon mankind by accident; or that any human being is subjected to injury or sorrow by mere chance, or at the caprice of such a creature as himself? Are we not a fortiori instructed by the analogy, unhesitatingly to receive the truths of revelation, that there is a moral and a final cause for moral suffering? Are we not directed to look beyond the chilling figment of the Optimist and Heathen, which would limit the power of omnipotence to general workings only, and to rely upon an overruling providence having an especial regard to the welfare of every individual creature?—to rest in faith, that no Spirit can inflict an injury upon another, unless by its own assistance or default;—that the crimes of the oppressor are only injuries to himself; and, if humbly received and appreciated, are converted immediately or ultimately into blessings to the oppressed?

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When we see that every particle of the material world is connected in its bearings with every other portion of the same, not on this earth alone, but throughout the system of which it is a part—when we observe likewise that the conduct of each individual upon the surface of that earth extends its moral influence to his neighbours, expanding in a wider and a wider circle, concurring with the rest, till it influences the destiny of the whole—May we not conceive the possibility of a moral connexion beyond its sphere?—And when we comprehend the glorious discoveries of Herschel, and find the earth 'and all that it inherit' shrinking to a less conspicuous station in the whole, than we may now conceive is occupied by the humblest individual upon her surface—Are we not almost tempted to regard, not only the material globe but the moral system, to which it is subservient, as a small and individual part of a comprehensive and connected whole;

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and *a priori* to suppose that a primeval taint upon its purity, like the crime of any human being, would remain with it in its consequences, rankling to the last hour of its existence, unless redeemed and rectified, according to its wants, by superhuman aid?

And if future discovery should ever present to us the great ruler of our material system here below, under the trinitarian aspect of Fire at its orb, of Light proceeding from it, and of Spirit returning to it, three conditions of one and the same etherial substance—if such an hypothesis is merely conceivable, though unproved—if such a mystery can take place in matter—why should the minute philosopher shrink from the revelation, that has condescended to instruct him in the great mystery of the Christian faith, of Three Persons in one God, each uncreate, almighty and incomprehensible, in glory equal, in majesty co-eternal?

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The passages in the Scriptures in which the persons of the Christian Trinity are shadowed forth, physically, by the same natural powers which are supposed to constitute the original triad of the Gentiles,—and spiritually, not as the mere attributes or faculties of a supreme mind, as represented in the heathen triads, but as distinct persons, claiming such peculiar attributes or respectively condescending, in the covenant of grace, to address themselves to such faculties of man, are too numerous to require to be specifically referred to. The Father is continually typified as a Fire accepting the sacrifices, consuming and punishing the guilty, as the Lord of all power and might, the dispenser of blessings, to whom all prayers are commonly addressed, the fountain of divinity, approached and known to us only through the mediation of the Son—the Son as Light, as a Mediator and a Teacher, enlightening

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the understanding, addressing himself more particularly to the Intellect, pointing out the distinctions between good and evil;—the Spirit, as Spirit or Air, a mighty rushing wind, operating upon the Affections, Feelings, or Emotions. We are commanded by the Christian faith to look to the Son for knowledge, to obey his instructions, and to accept the conditions of Salvation he has offered —to the Spirit, for grace to influence us in all our feelings, wishes and intentions —and to the Father, our prayers are to be directed for pardon for blessings and for the power to act.

I would not presume to lay stress upon any of the hypotheses I may have advanced or adduced in this inquiry. Man is apt to indulge his fancy in building systems, which he conceives may set forth the wisdom and goodness or magnify the power of his Creator; but when he brings them to the test, and finds the

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truth itself, he finds it infinitely more sublime than the happiest flight of his imagination. Yet as we must necessarily take all our ideas, as well as our language, from the sensible world—as we are taught that it is a glass, in which things spiritual are purposely, but darkly, shadowed forth—and as Physical science is naturally subservient to Mental, and both are but the handmaids of Religion; I deem that we outstep not the bounds of true philosophy, when, in the glorious works of the Almighty, we humbly trace a confirmation of his word.

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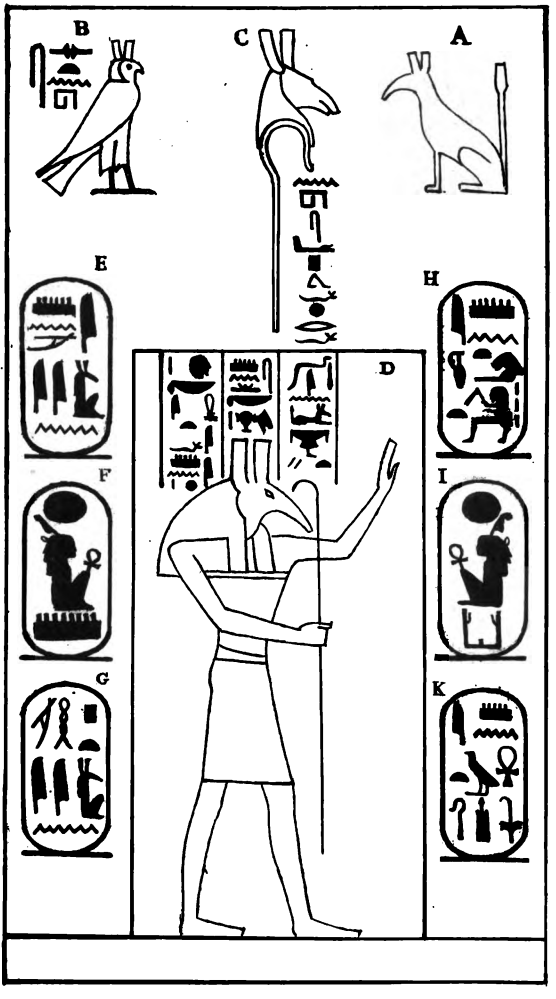

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MYTHOLOGICAL INQUIRY

INTO THE RECONDITE THEOLOGY OF THE HEATHENS

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MYTHOLOGICAL INQUIRY.

OF the Theological speculations, as well as of the literature of Greece, there were three perfectly distinct eras: but the light which at these three eras was spread over Greece was not confined to that country. It originated elsewhere, and was extended to the world at large; and it was connected with events, whose influence upon the destinies of mankind will never cease to operate.

The first authenticated era of Greek civilization and celebrity commences with the colony of Danaus from Egypt: and the theology of that age was derived from Orpheus, the disciple of Musæus. With the exception of the poems of Homer and

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Hesiod, little has survived to attest its literary greatness: yet there have been handed down to us some few theological and historical fragments of the deepest interest to the antiquarian.

The second, the classic age of Greece, after an interval of several centuries, is ushered in with the philosophical speculations of Thales and Pythagoras: and the writings of Herodotus take up the history of the world, where it was left by his cotemporary Nehemiah, the last of the inspired historians. It was a period in which philosophy, and every art, and almost every kind of polished literature, reached an unequalled eminence, and in which the theological speculations of many of its philosophers soared above the gross materialism of preceding times: but it was an age remarkable for the ignorance of its learned in every thing connected with mythological and antiquarian research.

With the promulgation of Christianity

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commences another era: and whether we regard the Greeks, as a nation, embracing the doctrines of the gospel, or opposing it by the systems of the later Platonists, it is an era in their literature, as well as in their theology, completely new. The light which broke forth with the promulgation of the gospel was preceded in some degree by the publication of the Septuagint: and the attention of many a learned antiquarian was turned to explore the history of their countries, and to develope the theological signification of the strange legends, which were still held sacred over so large a portion of the earth. The fragments, however, which lay before the antiquarian of that day, were too much broken to present to him the entire system of heathen theology; and the want of sufficient data disabled him from tracing the connexion, which he justly presumed must have originally existed between those legends and the sacred records.

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The connecting links in that broken chain, of which the many learned antiquarians of Greece, who flourished in the early ages of the Church, stood so much in need, have in our own times been supplied by two very singular discoveries. The first of these, the interpretation of the Hieroglyphics, lays the undisguised historic records of Egypt in juxta-position with the Hebrew scriptures: and this will eventually fix the history of the world by means of the authentic archives of two of its most celebrated nations; and at the same time has given us another key to the interpretation of the mythology of the ancients. The other discovery has been supplied from India, where heathenism, flourishing in all its parts and vigour, is still cultivated amongst a people under our own dominion, where it has been preserved by an uninterrupted priesthood, who still possess, and in a great measure understand, its ancient volumes, and to whom

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we may still have recourse for explanation.

At first sight the Mythological fragments of antiquity present to us a mass of confusion. Upon a closer examination, however, we find in them all certain features in which they correspond, and we may observe also certain differences, peculiar to itself, in which each nation varies from all others. By rejecting these differences, and retaining the points of resemblance, by thus collating the different systems, and extending this induction to all the fragments within our reach, we may extract the original and fundamental tenets of their mythology: and we may likewise in some degree ascertain how much of that truth, which was subsequently propagated by Christianity, had been revealed to the patriarchs of old.

The most remarkable feature in the heathen theology is the multiplicity of

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its gods. The easy temper of polytheism, as it has been called, hesitated not to adopt the divinities of the surrounding nations; while the deification, not only of heroes and kings, but of the virtues and vices, with the genii of the woods and waters, mountains and cities, contributed to introduce new and strange inmates into the Pantheon. But if we eject these modern intruders, if we restore to their original seats the imported deities, such as Pan to Arcadia, Hermes to Egypt, Hercules to Tyre, and Dionysus to India; and if we investigate the origin of each, we shall find every nation, notwithstanding the variety of names, acknowledging the same deities, and the same system of theology: and, however humble any of the deities may appear in the Pantheons of Greece and Rome, each, who has any claim to antiquity, will be found ultimately, if not immediately, resolvable into one or other

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of two primeval principles, the great God and Goddess of the Gentiles.

In conducting such an investigation, a very singular circumstance presents itself, in the manifold character of these deities. Their *human* or *terrestrial* appearance, as mere mortals deified is the most obvious. As the sun, moon, elements, and powers of nature, they assume a *celestial* or *physical* aspect. And if we turn to the writings of the philosophers, we shall find them sustaining a character more abstract and *metaphysical.* Yet under all these different forms, the same general system is preserved.

In his *terrestrial* character, the chief Hero God, under whatever name, is claimed by every nation as its progenitor and founder. And not only is he celebrated as the king of that country in particular, but of the whole world. He is exposed to some alarming danger from the sea, or an evil principle or monster

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by which the sea is represented. He is nevertheless rescued by some friendly female aid, sometimes concealed in a cavern or in the moon, or preserved in a death-like sleep, borne upon a snake, or floating on an island or a lotus, though more frequently in a boat or ark. At length he awakens from his slumber, subdues his enemy, and lands upon a mountain. He then reorganizes the world, and becomes himself the father, primarily, of three sons, and through them, of the human race; not unfrequently with some allusions to the dove and rainbow. In fact, in his *human* character he was the great father of mankind; but he may not only be identified with Noah but with Adam likewise. The one was looked upon as the re-appearance of the other, and both as incarnations of the Deity.

In his immediate *celestial* character the God is universally held to be the Sun.

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The character of the great Goddess is of a more complex description. As the companion of the man, she is the ark; which was regarded not only as his consort, but his daughter, as the work of his own hands; and his mother, from whose womb he again emerged, as an infant, to a second life; and as his preserver during the catastrophe of the deluge. As the companion of the Sun she is either the earth or moon: not that the distinctions between the human and celestial characters are accurately maintained; for they are so strangely blended together, that the adventures applicable to one are frequently, and sometimes purposely, misapplied to the other. Thus, whilst the Man is said to have entered into, been concealed in, and have again issued from the ark, the moon, and the earth, indifferently; the Sun is fabled to have been plunged into the ocean, to have sailed upon a lotus, to have taken refuge in a float-

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ing island, and to have dwelt upon a sacred mountain left dry by the retiring flood.*

The foregoing portion of the subject has been so fully investigated, that in the present essay I shall scarcely allude to it again, but will confine myself to an examination of the *physical* and *metaphysical* character of the great Deity and Triad of the heathens; and to some few points of the recondite theology of the Ancients, connected with that most interesting subject. And with that intent, I propose to examine in detail the different systems of each of the most civilized nations of antiquity.

As the Indian religion is still existing in the East, and accessible to our re-

* See Mr. Faber at length upon this subject, in his Pagan Idolatry; in which he has collected such ample authorities from the records of all the nations of antiquity, that it is unnecessary for me to make any observations in proof of the conclusions which he has drawn.

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searches, and is not so confused as the rest, I shall commence this inquiry with an investigation of its doctrines.

In his examination of the Vedas or Indian Scriptures, Mr. Colebroke gives the following description of the deities of India.—" The Deities invoked appear, upon a cursory inspection of the Veda, to be as various as the authors of the prayers addressed to them: but, according to the most ancient annotations on the Indian Scriptures, these various names of persons and things, are all resolvable into different titles of three deities, and ultimately of one God. The Nig'hanti or Glossary of the Vedas, (which is the first part of the Niructa,) concludes with three lists of names of deities: the first comprising such as are deemed synonymous with Fire; the second with Air; and the third with the Sun. In the last part of the Niructa, which entirely relates to deities, it is twice asserted that there are but three Gods, '*Tisra eva Devatah*.'

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The further inference, that these intend but one deity, is supported by many passages in the Veda; and is very clearly and concisely stated in the beginning of the index to the Rigveda, on the authority of the Niructa and of the Veda itself."* After citing several passages Mr. Colebroke continues,—"The Deities are only three, whose places are the earth, the intermediate region, and heaven: [namely] Fire, Air, and the Sun. They are pronounced to be [deities] of the mysterious names severally; and (Prajapati) the lord of creatures is [the deity] of them collectively. The syllable O'M intends every deity: it belongs to (Paramasht'hi) him who dwells in the supreme abode; it pertains to (Brahma) the vast one; to (Deva) God; to (Ad'hyatma) the superintending soul. Other deities, belonging to those several regions, are portions of

* VIII. Asiatic Researches, 385.—Moor's Pantheon.

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the [three] gods; for they are variously named and described on account of their different operations, but [in fact] there is only one Deity, THE GREAT SOUL (Mahanatma). He is called the Sun; for he is the soul of all beings; [and] that is declared by the sage. [The Sun] 'the soul of (jagat) what moves, and of (tast'hush) that which is fixed;' other deities are portions of him: and that is expressly declared by the sage 'The wise call *Fire* INDRA MITRA and VARUNA, &c."

In the Manava Sastra or Institutes of Menu the origin of the Universe is thus unfolded: 'It existed only in the first divine idea, yet unexpanded, as if involved in darkness, imperceptible, undefinable, undiscoverable by reason, and undiscovered by revelation, as if it were wholly immersed in sleep. Then the sole self-existing power, who had existed from eternity, shone forth in person, expanding his idea and dispelling the

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gloom. With a thought he first created the waters, and placed in them a productive seed: this seed became an egg, in which he was himself born in the form of Brahma, the great forefather of all spirits. The waters are called *Nara*, because they were the production of NARA, or the spirit of God: and since they were his first *Ayana*, or place of motion, he was thence named NARAYANA, or moving in the waters. In that egg the great Power sat inactive a whole year of the Creator: at the close of which by his thought alone he caused the egg to divide itself, and from its two divisions framed the world."*

The name given by the Indians to their Supreme Deity, or Monad, is Brahm; and, notwithstanding the appearance of materialism in all their sacred books, the Brahmans never admit that they uphold

* See also the Samveda in the Upanishads by Du Perron, I. p. 27.

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such a doctrine, but invest their deities with the highest attributes. He is represented as the Vast One* self-existing, invisible, eternal, imperceptible, the only deity, the great soul,† the overruling soul, the soul of all beings, and of whom all other deities are but portions.‡ To him no sacrifices were ever offered; but he was adored in silent meditation.§ He triplicates himself into three persons or powers, BRAHMA, VISHNU, and SIVA, the *Creator*, the *Preserver*, and the *Destroyer*, or Reproducer;‖ and is designated by the word O'M or rather AUM, by the respective letters of which sacred triliteral syllable are expressed the powers into which he triplicates himself.¶

The Metampsychosis and succession of similar worlds, alternately destroyed

* VIII. Asiatic Researches—Moor's Pantheon.
† I. Inst. Menu. 1. 6.7. &c.—Bagavat Gita, 73.
‡ VIII. As. Res. § III. As. Res. 359.
‖ II. Inst. Menu. 83—Gita. 142.—Upanishads, passim. ¶ III. As. Res. 359.

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by flood and fire* and reproduced, were doctrines universally received among the heathens: and by the Indians, the world, after the lapse of each predestined period of its existence, was thought to be destroyed by Siva. At each appointed time of its destruction, Vishnu ceases from his preserving care, and sleeps beneath the waters: but after the allotted period, from his navel springs forth a lotus to the surface, bearing Brahma in its cup, who reorganizes the world, and, when he has performed his work, retires, leaving to Vishnu its government and preservation; when all the same heroes and persons reappear, and similar events are again transacted, till the time arrives for another dissolution.

Brahma is less worshipped and celebrated than Vishnu and Siva. Having exercised his office of creating or rather regenerating the world, he retires and

* See the authorities collected by Mr. Faber.

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interferes no more. He is esteemed as Time in the abstract, as Time Past, and the Beginning. *Metaphysically* he is Power, or, according to others, Knowledge;* and *physically* he is stated by some, to be more particularly Earth or Matter, but sometimes Fire. He is the Sun in the morning, his color is red, and his Vahan, (the creature upon which he is carried, or which is sacred to him,) is the Swan or Goose; and the place, in which he resides, the Earth. He symbolizes gravity; and is delineated with four heads.

With respect to the primeval Deity and the production of Brahma there is a manifest contradiction in the sacred books. In the Manava Sastra, Brahma is said to have proceeded from the egg, deposited by Nara or Narayana upon the waters; or according to others, to spring in a lotus to the surface of these chaotic

* III. Picart's Religious Ceremonies, 410-437.

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waters, from the navel of Vishnu, or Narayana, who was immersed in sleep beneath them: and in accordance with this, the Vaishnava sects, or followers of Vishnu, make Vishnu the same as Brahm, the primeval God and Spirit, from whom Brahma proceeds to the reconstruction of the world. But this is denied by others, who look upon Brahm as the sole monad, distinct from Vishnu, who is esteemed but one of the forms in which he proceeds. It is a difficulty to be simply stated here, but which will vanish as we proceed.

After the construction of the world by Brahma, the office of its preservation is assumed by Vishnu. His chief attribute is Wisdom: he is the Air, Water, Humidity in general, Space, and sometimes, though rarely, Earth: he is Time present, and the Middle; and he is the Sun in the evening and at night. His color is blue or blackish; his Vahan, the Eagle named Garuda; his allotted place, the Air or intermediate region, and he sym-

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bolizes levity. It is he, who most commonly appears in the Avatars or Incarnations, of which nine in number are recorded as past: the most celebrated of which are his incarnations as Mateya or the Fish, Rama, Krishna, and Buddha: the tenth of Kalki or the Horse is yet to come. It is from him that Brahma springs when he proceeds to his office of creation.

The destroying and regenerating power, Siva, Mahadeva, Iswara, or Routrem is regarded *metaphysically* as Justice, and *physically* as Fire or Heat, and sometimes Water. He is the Sun at noon: his color is white, with a blue throat, but sometimes red:* his Vahan is the Bull, and his place of residence the Heaven. As destruction in the material world is but change or production in another form, and was so held by almost all the heathen philosophers, we find

* Schat Roudri, II. Duperron, p. 175.

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that the peculiar emblems of Siva are the Trident the symbol of *destruction*, and the Linga or Phallus of *regeneration*.

The three Deities were called Trimurti; and in the caverns of Ellora they are united in a Triune bust.* They are collectively symbolized by the triangle. Vishnu as Humidity personified is also represented by an inverted triangle, and Siva by a triangle erect as a personification of Fire, while the Monad Brahm is represented by the circle as Eternity, and by a point as having neither length nor breadth, as self existing, and containing nothing.† The Brahmans deny materialism; yet it is asserted by Mr. Wilford,‡ that when closely interrogated on the title of Deva or God, which their most sacred books give to the Sun, they avoid a direct answer, and often contradict themselves and one another. The

* Bp. Heber contends that this bust does not represent the Indian triad.

† Moor, 400. ‡ III. As. Res. 372.—Moor.

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supreme divinity of the Sun, however, is constantly asserted in their scriptures; and the holiest verse in the Vedas, which is called the Gayatri, is,—"Let us adore the supremacy of that divine sun, the Godhead, who illuminates all, who re-creates all, from whom all proceed, to whom all must return, whom we invoke to direct our understanding aright in our progress towards his holy seat."* The commentary of Sir William Jones upon this is exactly in the apologetic form of one of the later Platonists, allegorizing and refining upon the awkward materialism of the Orphic doctrines, which he would explain away, but is unable to conceal.

It must, however, be observed, that the Indians have divinities, as it were counterparts of these three great deities, but mere material principles, as Indra the God of the Firmament, Agni† the

* Sir W. Jones's Works, vol. vi.—Moor.

† Moor.

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tri-formed deity of Fire, and Surya* the Sun was another form, and was held to be three bodied. Ravi† also another personification of the Sun was esteemed by them one of the Trimurti, or triple forms of their three great divinities into which these are all resolvable.

In the vulgar Theology of the Greeks and Romans, the Triad is commonly represented as the three sons of Kronus or Saturn,

ZEUS, POSEIDON, PLUTON,
JUPITER, NEPTUNE, PLUTO,

the gods respectively of the Air or Heaven, of the Sea, and of Fire or the Infernal regions. In accordance with this, the Triad delivered by Pherecydes Syrus‡ is

SPIRIT, WATER, FIRE.

These triads differ from all other heathen

* Sir W. Jones.—Moor. 27-8.
† Wilford, III. As. Res. 359.
‡ Damascius, See Anc. Frag. 317.

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triads by the introduction of Neptune as the second person. In all the others, the principle of Humidity, whether it be of water or of air, is represented by one single personage, Vishnu, the same as Zeus. This anomaly, however, is explained by Herodotus, who states that Neptune was not one of the original gods of the Pelasgi the first inhabitants of Greece, nor of the Egyptian colonists, but was a subsequent importation from Lybia.* And if we examine the more ancient fragments, we shall find in the Greek theology a most exact correspondence with the rest; and as it will in a great measure elucidate the Egyptian, I take it in precedence.

The original Pelasgic inhabitants of Greece are stated by Herodotus to have given no names whatever to their Gods. The Greek theology, handed down to us, was derived from Egypt, and was intro-

* Herod. ii. c. 50.

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duced by Orpheus. In the Orphic fragments, the generation of the universe and of the gods is by Hesiod,* Orpheus,† Aristophanes,‡ Suidas,‖ and others described as proceeding from the Ether and Chaos. From these two principles the primeval god and goddess, or rather from the first of them, the ancient Ether, which as Night overhung the Chaotic globe, shot forth the Light, which was Phanes, or Eros,§ or Pothos, who was the fabricator of the world: though he is sometimes described as proceeding from an egg.¶ In a fragment of the Theology of Orpheus, preserved by Damascius,** this Phanes is represented as a triple divinity with wings, and surrounded by the head of a

* Theog. 116.

† Arg. 12. 49. Hymn to Protogonus—Hermias in Phædon, 141—Procl. in Timæum—Athenagoras. The greater part of these passages are collected and translated in the Ancient Fragments.

‡ Aves. 698. ‖ Article *Chaos*.

§ Anc. Frag. p. 294. 298. ¶ Ib. 310. 311.

** Anc. Frag. 311.

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Bull, a Lion, and a Ram, conjoined with a Serpent; and similar fragments are preserved by Proclus. In another fragment of the same, preserved originally by Timotheus, and also quoted with some slight variations by Cedrenus, Suidas, and Malala, the cosmogony is thus distinctly represented.*—"From the beginning the Ether was manifested in time, and on every side of the Ether was Chaos: and gloomy Night enveloped and obscured all things, that were under the Ether. The Earth was invisible on account of the darkness: but the light broke through the Ether, and illuminated the Earth, and all the material of the creation: and its name is Metis, Phanes, Ericapæus † (signifying Will or Counsel, Light, Life-giver). By this power all things were produced, as well incorporeal principles, as the sun and moon, and their influences, and all the

* Anc. Frag. 296. † Ib. 311.

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stars, and the earth, and the sea, and all things that are visible and invisible in them."

We have here the Triad proceeding from the Ether as Phanes in the form of

METIS, EROS, ERICAPÆUS,

which are equivalent to

Will, *Light*, *Life*,
or Counsel, *or Love*, *or Lifegiver*,

Acusilaus* gives the triad

METIS, EROS, ETHER.
or Love,

Another Orphic fragment, the Hymn to Protogonus,† when literally translated, runs thus:—

"I invoke thee, oh Protogonus, two-fold, great,
wandering‡ through the Ether.
Egg-born, rejoicing in thy golden wings.
Bull-faced, the generator of the blessed,
and of mortal men.
The much renowned *Light*,
the far celebrated *Ericapæus*.

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* Damascius, Anc. Frag. 316.
† Anc. Frag. 294. ‡ Qy. Breaking.

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Ineffable, occult, impetuous,
all glittering strength;
Who scatterest the twilight cloud
of darkness from the eyes,
And roamest through the world
upon the flight of thy wings,
Bringing forth the brilliant and pure light:
wherefore I invoke thee as *Phanes*,
As *Priapus* the king,
and as the *Dark-eyed* Splendor*,
Come, thou blessed being, full of wisdom†
and generation, come in joy
To thy sacred ever varying mystery.
Be present with the priests of thy orgies."

The Protogonus or Being proceeding from the Ether is here represented as

The BULL-faced LIGHT, ERICAPÆUS, GENERATOR,

again repeated as

PRIAPUS, PHANES, DARK-EYED, Splendor,

a being full of Metis and generation.

The same appears from other Orphic

* Or Dark-faced. † Metis.

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Fragments,* preserved by Proclus in his commentary on the Timæus.

Metis, the first Father, and all-delightful Eros.

Again,

Soft Eros, and inauspicious Metis;

and,

Metis bearing the generation of the Gods,
illustrious Ericapæus;

and in the Cratylus,

Metis bearing the seed of the Gods, whom
the blessed
Inhabitants of Olympus call Phanes Protogonus.

From these fragments, we may at once perceive that the persons of the Orphic triad correspond, not with the Jupiter, Pluto, and Neptune, of the vulgar theology, but rather with the Jupiter, Pluto, and Phanes, who is the same with Apollo: and a remarkable correspondence may be traced between them and the Indian.

* Anc. Frag. 297.

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From the ancient Ether, springs forth the Phanes, as Brahma springs from Vishnu. He is the creating principle, represented with three or four heads, who springs from an egg to regenerate the world, and he proceeds as the triad,

ERICAPÆUS, PHANES, and METIS,

corresponding with the Indian Triad,

VISHNU, BRAHMA, and SIVA,

who proceed from Brahm.

The first of these is Ericapæus, the same with Zeus or Jupiter, who is esteemed the Etherial person of the triad, as the Preserver,* or Saviour,† as Life, and the Giver of Life,‡ as Meilichos,§ which I should translate the King. In his *physical* character, he is the God of Air,‖ and the ancient Ether, from which the Phanes sprung: he is the father of Apollo. His color, if colored, is dark

* Phurnutus, § 6. † Jupiter Soter, passim.

‡ Phurn. § 2. § Ib. § 5.

‖ Varro de Ling. Lat. iv—passim.

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azure,* and his attendant animal is the Eagle, and it is he that is supposed so frequently to become incarnate: and in another of the Orphic fragments,† preserved by Aristotle and others, he is represented as invested with the attributes of the Supreme, almost in the very words which Vishnu uses in the character of Krishna.

Phanes, or Eros, is the person, who springs from the preceding power. *Metaphysically* he is Intellect,‡ and *physically* he is the Light, which broke forth from the ancient Ether, the Creating power, often represented as a child, his color is white, and his vahan is sometimes the Lion,§ and sometimes a

* Statius also mentions the infernal Jupiter as black.

† Compare the passage, Anc. Frag. 289, with the Bagavat Gita translated by Wilford: both passages relate to the ancient Ether, rather than to the Etherial power of the Triad.

‡ Damascius. § Lydus, c. 7.

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triply-combined animal of the Ram, the Bull, and the Lion, with a Serpent twined around them;* for which in the classic ages was substituted the chariot and horses, though he still preserved as emblems, the tripod and the serpent.

The third person, mentioned in the Orphic triads, appears as Metis, translated as Will or Counsel, the Primeval father,† the Generator Priapus,‡ Bull-faced, and Inauspicious: but in the classic theology he appears as Pluto, the Destroyer,§ the God of Hades or Fire, and of Corruption. He was the orb of the Sun.‖ His color is red, and his attendant animal the Cerberus.

The three were respectively regarded as the Beginning, Middle, and End, and were each identified with the Sun; as

* Anc. Frag. 299. 310. † Anc. Frag. 290.

‡ Hymn to Protogonus, the principle generation being attributed both to the second and third persons of the triad has caused much confusion.

§ Phurn. § 5. ‖ Macrobius—Porphyrius.

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more particularly was Phanes in his collective character. In the sacrifices, the ceremonies were three times performed:* and in the mysteries, the invocation to the Sun was in the following form and words—

"Oh all ruling Sun
SPIRIT of the world,
POWER of the world,
LIGHT of the world."†

If we turn to the recondite theology of Egypt, the earliest fragment that presents itself is the Cosmogony of Sanchoniatho,‡ which, though it has descended to us through Phœnician hands, is an Egyptian record from the books of Thoth. 'In this the beginning of all things is represented as a dark windy

* Ἐς τρὶς ἀποσπένδω, καὶ τρὶς τάδε, πότνια, φωνῶ. Theoc. Id. ii. 43.

† Macrob. I. Sat. c. 23.

‡ I. Eus. Pr. Ev. c. 10. It is given with an English translation in the Anc. Frag. p. 1.

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AIR, and CHAOS unbounded, and without form. From the embrace of these proceeded POTHOS, or Love. After whom a third is introduced, called MÔT, but which was by some called ILUS; and from hence sprung the seed of the creation and the generation of the universe.'

In the Hermetic creed, another Egyptian fragment of great antiquity, preserved by Jamblichus, and in the fragments preserved by Damascius, also of great antiquity, we find the Supreme represented as 'a Monad prior to the first God and King, immoveable in the solitude of his Unity, the fountain of all things, and the root of all primary Intelligible existing forms, the Indivisible One, the first Effigies, who is denominated EICHTON.* He is venerated in silence,* and celebrated as unknown darkness three times pronounced as such.†

* Jamblichus Myst. § viii. c. 2. 4.—Anc. Frag. 284.

† Damascius.—See Anc. Frag. 320

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From this ONE, the self-ruling God shone orth, the Monad from the One,* the Holy Light,† EMEPH, the ruler of the celestial gods, the Demiurgic Intellect;‡ which, when it proceeds to generation, is called AMON; but perfecting all things, not deceptively but artificially according to truth, PHTHA or Hephæstus; and as the producer of all good, OSIRIS.'§

The triple deity into which EMEPH resolves himself is therefore according to Jamblichus

AMON, PHTHA, OSIRIS,

who are officially the

Generator, *Perfecting truly*, *Producer of good.*

but according to Mnaseas,‖ the three, who are united as Epaphus, are

SARAPIS, DIONYSUS, OSIRIS.

* Jamb. § viii. c. 2. † Ib. c. 2.

‡ Damas. see Anc. Frag. 284. and Porphyrius.

§ Jamblichus, Ib.

‖ Plut. Is. and Os.—Epaphus is said by Syncellus to have been the son of Jupiter. By Plutarch he is also called Apopis.

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In Eusebius* is a very curious passage, in which the deity, whom he calls the Demiurgus, is described as KNEPH, of a dark azure color, with a sceptre, and a royal plume, and zone. This deity from his mouth put forth an egg, from which was born the god, whom the Egyptians call PHTHA, but the Greeks Hephæstus.

In the Sermo sacer of the Hermetic books now extant,† we have the first principles of the universe laid down as SPIRIT in darkness, and Water, from which sprung the Holy LIGHT. According to Heraiscus,‡ Water and Sand, and according to Asclepiades Sand and Water, were the primeval principles: from which was generated the first Kamephis, and from him a second Kamephis, and from this again a third.

* III. Pr. Ev. c. 11.—XVII. Str. 562.

† Anc. Frag. 286.

‡ Anc. Frag. 321.—I suspect the Greek word ψάμμον has been substituted for ἄμμον both signifying *sand*, and that the Egyptian Amun is concealed under the word, and has by this means been lost.

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We have in these fragments precisely the same tenets as in the preceding. From the Etherial principle, which was co-existing in darkness with the chaos, and which is denominated the Ether, or Eichton, or Kneph, springs forth Pothos or Phthah, the Brahma of the Indian, and the Pothos Eros Love or Phanes of the Orphic theology, the Apollo Pythius of the classical and more corrupted system; whose name of Emeph appears to be a variation of the Emephtha of Stobæus,* the Epaphus of Mnaseas,† and the Kamephis‡ of Asclepiades and of

* Phys. Eclog. † See Pindar, iv. Pyth.

‡ La Croze has suggested as the derivation of this word the Coptic XHMI-ΦI, the Protector of Egypt, and though I cannot accede to the opinion, it certainly is in some measure countenanced by Cicero De Nat. Deor. lib. 3, who says, "Secundus Vulcanus Phthas, ut Ægyptii appellant, quem custodem Ægypti volunt." It is canvassed by Jablonski Panth. Æg. who suggests a connexion between the name and the Χωμαεφθὰ of Eratosthenes. I should suggest that it is only Amun Phthah.

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Stobæus also. He is born from the egg, and is the Creating Power, more particularly distinguished as *Light*, and metaphysically as *Intellect*:* and it is this deity, who proceeds in the form of a triad, as

Osiris,	Phthah,	Amun,
Osiris,	Dionysus,	Serapis.

In the preceding fragment of Sanchoniatho, the third person appears as Môt, called also Ilus, by some translated *Mud*, that is, the chaotic mixture, but which is evidently the Phœnician IL or *God*. This personage appears to be the same, that is also, by Sanchoniatho, called Muth, and identified with Pluto.† He is the Serapis and Amun above mentioned, and the Metis of the Orphic system; and as Siva in the Indian produces the chaotic waters, so is he said

* In the Targ. Jerusalem, it is asserted, that the Egyptians called the Wisdom of the first Intellect, Ptha.

† Anc. Frag. 15.

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to provide the seed, or perhaps the substance of the creation.

If from these the most ancient fragments of Egyptian lore, we turn to the records inscribed upon her enduring monuments, we find a multitude of gods as among the Indians: but the higher we ascend, the more the number diminishes, and upon the oldest monuments the most frequent delineation is that of Amun Ra alone, who appears in three distinct forms, and into one or other of whose characters all the other divinities may be resolved. The chief god of the Egyptians was designated by the name of Amun: and this is evidently the sacred name, the AUM of the Indians, which appears to be that alluded to by Martianus Capella,* and is said to have been first committed to writing by Bitys,†

* Salve vera Deum facies, vultusque paterni
Octo et sexcentis numeris cui litera trina
Conformat sacrum nomen, cognomen, et omen.
Hymn. ad Solem.

† Jamb. § viii. c. 5.

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and was probably the Egyptian On, or Avn of the scriptures. The other great deities of Egypt are described by M. Champollion as other forms, in which this deity proceeded, or as emanations of this, which is alone the first great Spirit penetrating all things.*

According to Mr. Wilkinson, the Egyptians held Kneph, Neph, Nef, or Chnoubus, "as the idea of the Spirit of God which moved upon the face of the waters."† He was the Spirit, animating and perpetuating the world, and penetrating all its parts ;‡ the same with the Agathodæmon of the Phœnicians,§ and like him, was symbolized by the snake, an emblem of the spirit which pervades the universe.‖ He was commonly represented with a Ram's head; and though the color of the Egyptian divinities is perhaps more commonly green than

* Theodoret, cit. Champ. Panth.
† Mat. Hier. 2.
‡ Champ. Panth.
§ Euseb. Pr. Ev.
‖ Horapollo.

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any other, he is as frequently depicted blue. He was the god of the Nile,* which is indirectly confirmed by Pindar;† and by Ptolemy,‡ who says, that the Egyptians gave the name of Agathodæmon to the western, or Heracleotic branch. From his mouth proceeded the Mundane Egg, from which sprung Phthah, the creative power.§ Mr. Wilkinson proceeds,—"Having separated the Spirit from the Creator, and purposing to set apart and deify each attribute, which presented itself to their imagination, they found it necessary to form another deity from the Creative power, whom they called, PTHAH, proceeding from the former, and thence deemed the son of Kneph. Some difference was observed between the power, which created the world, and that which caused and ruled over the generation of man, and continued to promote the continuation of the human species. This latter attribute of the

* Champ. Panth. † IV. Pyth.
‡ IV. Geog. c. 5. § III. Euseb. Pr. Ev. 11.

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divinity was deified under the appellation KHEM. Thus was the supreme deity known by the three distinct names of,

KNEPH, PTHAH, KHEM:

to these were joined the goddesses, Sate, Neith, and Buto; and the number of the eight Deities was completed by the addition of Ra, or Amun Ra:"* this last, however, was not a distinct god, but a name common to each person of the triad: and indeed to all the three names above the name of Amun was constantly prefixed.

PHTHAH, according to Mr. Wilkinson,†

* Mat. Hier.—I have no intention to make any observations upon the goddesses, who are all variations of the same who was regarded as the Chaos, the Earth, and the Ark; of which the following important passage of Plutarch is in part a confirmation: "Isis they sometimes call MUTH, and sometimes ATHURI, and sometimes METHUER. By the first of these names they signify a *Mother*, by the second *Horus's mundane house* (which was the ark or egg, the Aphrodite of the Greeks); but the third is compounded of two words, one signifying *full*, and the other, *cause*." Is. and Os.

† Mat. Hier. 8.—Champ. Panth.

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was the creative power, who sprung from the Egg, produced from the mouth of Kneph.* He was the god of Light† His form was a Mummy,‡ with the emblems of *life* and *stability*,§ and with the *staff of power*. He corresponds accurately with the Brahma of the Indian, and Pothos or Phanes of the Orphic systems, and like them, appears in three or more other forms. One of these forms is of a hawk-headed deity, of an azure color, with the emblems of Phthah. By Champollion this form is called Phthah Socari. In another form he is represented as an infant, and frequently as an infant Priapæan figure, and de-

* III. Euseb. Pr. Ev. c. 11. Cicero also describes him as the son of the Nile—and Champollion as the son of Amun Kneph.

† I have no doubt but that φῶς φωτὸς, as well as the Πόθος of the Greeks was derived from *Phthah*.

‡ Quære, whether the bandaged figure does not rather intimate an infant, swathed as is the custom in the Mediterranean.

§ Formerly taken to be the *Nilometer*. I suspect that it is the emblem of *Creation or Intellect*.

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formed, and as such, is evidently the Pothos, Eros, Horus, and Harpocrates, of the Greeks: and in this form also he is sometimes called Phthah Socari.* As Phthah Thore, he has a Scarabæus for his head,† and this may perhaps be considered the animal more especially sacred to him, as it is also placed upon the head of the infant figure. Ælian‡ however says, that the Lion was consecrated to him as Hephæstus.

KNEPH the Ethereal principle, and PHTHAH the Creative Light, the Pothos of Sanchoniatho, the Horus of the Orphic poets, were the two most obvious divinities of Egypt. The other person of the triad is as common on the monuments. Mr. Wilkinson calls him KHEM, and Champollion, Mendes: and both

* Hesychius, under the word Πααμύλης gives the name Σόχαρις. I have a strong suspicion that this name of Σόχαρ is the original of Osiris, the Sihor, or Nile of the Scriptures, and the Siris or Sirius of Plutarch.

† Champ. Panth.

‡ Lib. 12. c. 7.—lib. 5. c. 30.

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agree in assuming that he is equivalent to the Pan of the Greeks, the Amun Generator of Jamblichus, and that his great attribute is Heat, the genial warmth that assists in the continuation of the various species. This deity is painted in a standing posture, of a red, and sometimes a blue color, with his right arm extended upwards. He has two especial emblems; the one, a triple-thonged Flagellum, the other, the Phallus. The names by which this deity is always designated appear in the annexed hieroglyphical inscriptions. The first of these, A, which is given in Champollion's Pantheon, I should read as *Seth*, and the second, B, given by Mr. Wilkinson and Mr. Burton, as *Seth Amun Mnevis Muth*, or *Seth Amun Khem Mthu*,* and am inclined to call him SETH, MÔT, or METIS.

A

B

* The last characters can hardly mean that he was *the son of his mother.* But as Siva is said to

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This deity is the same as the Siva of the Indians, their Destroying and Regenerating Power; for he exactly coincides with him in all his attributes. He is the God of Heat and generation, and like Siva, has his Phallic emblem of reproduction: and his triple-thonged flagellum, the emblem of vengeance and of the ruler of the dead upon the monuments, I take to be but a slight variation of the trident, or of the axe of Siva. His vahan also is the Bull Mnevis, as is the Bull Nandi that of Siva. The Goat Mendes, was also consecrated to him as an emblem of heat and generation; and an animal of this kind is constantly placed in one of the hands of Siva. The Greeks have taken him to be the same as Pan: and this Pan in one of the Orphic rhapsodies is stated to be the same as Dis,*

have produced the chaotic waters, so this title may perhaps imply, that Khem was the *Cause or Producer of Isis, the Chaotic or Terraqueous globe.*

* Damasc. Anc. Frag. 314.—Horapollo.

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or Pluto, or Muth; and he is identical with Priapus; and with Serapis whose peculiar head-dress, the modius or basket, is also placed upon the head of Mnevis. In short, there is scarcely a shade of distinction between Khem and Siva: the Egyptians venerated the same deity as the Indians, in his generating character as Khem, when they suspended the flagellum, the instrument of vengeance, over his right hand; but in his destroying character, as the ruler of the dead, as Osiris, when they placed the flagellum in his hands as the trident is in that character placed in the hand of Siva. I shall presently, however, have occasion to make some further observations with respect to the original identity of this deity, and the manner in which he has been degraded from the high station which he occupies in the ancient Indian, Egyptian, and Orphic triads, to the Typhon and Arimanes of succeeding times, and been moreover confounded with the chaotic matter.

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In the monumental theology of Egypt, we have ascertained the triad in its separate persons to consist of Kneph, Phthah, and Khem: to all of whom temples and altars were consecrated individually. But the more ancient and common name of the great deity of Egyptian worship, was RA or AMUN RA, the Sun, who takes the attributes of each, and all the three above; and as he frequently appears in the separate character of each of the individuals, so we have sometimes all the emblems and attributes of all three combined in his single figure. In the fifth plate of M. Champollion's Pantheon, is a very curious representation of Amun Ra, as King of the Gods. He is composed of the human head, with the Plume and Sceptre of Amun; combined with the heads of the Ram, the disk and horns of Amun Kneph; the Flagellum and Phallus of Amun Khem; and the Scarabæan body, with the emblems of life, creation, and power, of Amun Phthah; to which

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are added also the legs of a Lion, and the tails of the Lion and the Crocodile, with four arms, and the wings both of the Hawk and Scarabæus: and his color is yellow. In other plates we find similar combinations. He was looked upon, according to some, as proceeding from Phthah: but he was himself the Egyptian triad, the compound triple Phanes, of the Greeks and the Indian Brahm.

In the classic age, the persons of the Egyptian triad became strangely confused. As described from Herodotus to Plutarch, they consist of

OSIRIS, HORUS, TYPHON.

Of these, HORUS, the Creating power, was universally regarded as the *Sun* and *Light*, and particularly the Summer's sun, and metaphysically, as *Intellect*. He was represented as the infant son of Osiris: of which legend Plutarch gives us a variation that Aroeris, or the elder Horus, was the son of the twins, Isis and Osiris, begotten before they themselves were born, and born with them and Typhon

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and Nephthys at a birth.* His color was white,* and his symbolic animal was commonly the Hawk, but sometimes the Lion or the Cat,† and lions were placed under his throne:‡ and at Chemmis, a triple altar was dedicated to him alone.§ Julius Firmicus addresses him as the father and mother of all:‖ and he was sometimes depicted as a Priapean figure, as the generator,¶ scattering the seeds of generation, and bringing to light the sea and land: and under the character of Harpocrates, he was represented as the Sun sitting in a lotus on the surface of the waters. He is evidently the same as Brahma Phanes and Phthah.

The preserving power Osiris was

* Plut. Is. et Os. † I. Horapollo.

‡ I. Horapollo. § II. Herod. 159.

‖ Tu omnium pater pariter et mater: Tu tibi pater ac filius. Præf. ad Lib. 5. Mathes. 115. Jablon.

¶ Suidas *Priapus*.

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regarded as the chief deity, presiding over the world.* Metaphysically, he represents that Intellect,† or Soul of the world, which is the Power of good, the Prince and Ruler of all good things. Physically, he was the Air, and the Nile, or the Principle of Humidity in general, which is likewise affirmed by Sallustius.‡ His color was black,§ and the animal sacred to him was more especially the Hawk,‖ and he was the Sun. Thus far he is identical with Kneph: at other times he is confounded with Horus. But he is more constantly identified as an infernal deity, with Serapis or Pluto, as king of the lower regions and the south,¶ and as the de-

* Herod.—Plut. † Λόγος, Plut. Is. et Os.

‡ De Düs, c. 4. § Plut. Is. et Os.

‖ Plut.—Diod. Sic.—Passim.

¶ Ἥλιος δὲ Νότου ἄναξ ἱέραξ πολύμορφε. Anticlides cited by Kircher. Œd.—Jabl. Panth. 158. Plutarch says, that the power of the air was by some called Osiris, by others Serapis, by others Sothi, in the Egyptian tongue.

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clining year*: and Plutarch† evidently regards him as the Khem of the monuments, where he says, that he is every where exhibited in Egypt with the Phallic emblem of generation, and clad in a flame-colored robe, and was esteemed that intelligible substance of which the Sun was deemed the body and visible part.‡ Plutarch states, moreover, that his name was not Osiris, but Siris, or Sirius, and that he was also denominated Ompha;§ and was in his opinion the same with Serapis, and was by some called Sothi:§ but Diodorus Siculus‖ says, that some called this Phallic deity Ithuphallus, but others Tychon.¶ Hel-

* Osiris recidivi anni fidem argumentatur. Tertull. cit. Jabl. Panth. 154.

† Is. et Os.

‡ For this reason he strangely condemns the opinion, which in his day ascribed the globe of the Sun to Typhon. § Plut. Is. et Os.

‖ Hist. iv. c. 6.

¶ In this passage Clemens cites the name Typhon.

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lanicus asserts that his name, as pronounced by the priests, was Ysiris.*

Typhon is the destroying principle. His proper name is Seth.† He is also called Smu, and, according to Manetho, Bebon; all which terms are indicative of Power, and Destruction, and Impediment:† and he was considered the irrational part of the Soul.† Physically, he is Fire, Heat, or any thing Fiery;† and by some, he was regarded as the Orb of the Sun, an opinion current in the time of Plutarch, but which that author condemns as heterodox. He was also esteemed the Sea.† His color was red,† and his vahan was the Bull; but in later times the Hippopotamus and Crocodile† were given him as emblems.

All the three powers were regarded as the Sun, which, according to Macrobius,‡ was in the upper regions depicted bright, and in the lower blue.

The confusion among the classical

* Hellanicus. ap. Jabl. 152.

† Plut. Is. et Os. ‡ I. Sat. c. 19.

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writers has arisen from ignorance and misconception. About a century before Herodotus a great reformation had taken place, in which the Persian doctrine of two independent powers, a *good* and *evil* principle, had been blended with the ancient theology: and hence it happened, that one of the three great powers, among some nations, became degraded into an Evil Demon, as Arimanes and Typhon; and by others, among whom must be reckoned the philosophers of Greece, was confounded with the Chaotic matter; to whose perversity, from Pythagoras downwards, they attributed the origin of evil. But the further we go back into antiquity, the more respectable does the Avenging, or Destroying, and Re-producing power appear. In the Indian and ancient Egyptian systems, Siva and Khem exhibit the most accurate resemblance of each other, and are each one of the three great divinities. In the Orphic again he is Metis, Counsel, or Power in the abstract, and the Re-

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generating deity. To explain fully the strange confusion that occurs in the Egyptian mythology of the lower age, we must attend to another important circumstance. In an early age of Paganism occurred a violent schism, which divided all the worshippers of idols into two great contending parties, which are still existing in India, and are well known under the names of Vaishnavas, and Saivas.* The Vaishnavas were the worshippers of Vishnu or Kneph, whom they regarded as the chief deity, while they considered Brahma and Siva as inferior: while the Saivas esteemed Siva as the chief, and Brahma and Vishnu as subordinate: and in every heathen nation a preference was in time given to the worship of the one of these deities over the other, or the nation was divided between the two parties. From a passage in Plutarch, that the inhabitants of the Thebaid worshipped Kneph alone,

* See Mr. Faber's Idolatry.—Moor's Pantheon.—As. Res. passim.

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whom they regarded as the only god without beginning and without end, it would seem that they were at one time of the Vaishnava sect:* but from the classical mythology of Egypt it is evident, that the Saivas were the prevailing sect. Osiris became the chief deity of the Egyptians: and when he is described by the classic writers as the ruler of the dead, as an infernal deity, with the Phallus, Flagellum, and the Bull, in a flame-coloured robe, and under the name of Sothi, they are evidently describing the deity who upon the monuments appears both as Khem and Osiris, and to this, his prevailing character, alone, are applicable all the common legends of the Phallus: but when they add that he is the preserving power, the Air, the Principle of Humidity, of a black or azure color, with an attendant Hawk, they are giving him the additional attributes of Kneph. And while the Egyptians

* Perhaps this is applicable only to Nubia, in whose triads a goddess is substituted for Khem.

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thus united the divine attributes of Khem and Kneph in their Osiris or Serapis,* they gave to Typhon, as an evil power, those original attributes of Khem, that is, Vengeance, Retribution, Power, Heat, Hades, and the Sun's orb, which they deemed inconsistent with the character of Osiris. Nor is this union of the characters of Kneph and Khem singular: for the very same union of the characters of Vishnu and Siva took place about the very same time among the Indians, in their great idol Jaganath,† who is still regarded as a common deity, in whose worship every sect and every caste of Indians unite.

I must here advert also to the similarity and confusion which prevails, in

* The attributes of Phthah Socari, as the Hawk-headed deity, are also traceable. The name Osiris is commonly by Indian mythologists derived from Iswara or Ixora, a common name of Siva. There is evidently some connexion.

† Jaganath is described by Moor as Krishna or Vishnu; by Maurice as Siva. The characters were united. See II Pag. Id. 482.

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all the systems we have examined, between the creative and destroying powers, the respective principles of light and heat, which arises, not from the misdescription of authors, ignorant of the distinctions, as in the classic age, but from the subject itself. As in Egypt Khem and Phthah are both Priapæan gods, and have the emblems of generation: so in India, Siva is esteemed, not merely the destroying, but the reproducing or generating power, as well as Brahma: to account for which, Mr. Moor observes, that, in natural phenomena, the destruction of one form is but reproduction in another. So also there is a confusion between the vahans, as well as between the colors of Brahma and Siva. It has arisen from the subject itself, for physically it is not easy to draw the distinction between, or to define the attributes of, Heat and Light. In like manner the Vulcan of the Latins may be identified with the Phthah of the Egyptians, and with the Pluto, as well

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as with the Hephæstus of the Greeks. Again, we have Neptune, the deity of the ocean, the same with the Indian Siva, particularly in his form of Varuna, and both bearing the trident, the emblem of destruction, but in the Egyptian, the ocean is represented by Typhon, as the antagonist of Osiris, and as an infernal god. Yet, notwithstanding all this apparent confusion, there was originally a clear distinction, which will appear more fully as we proceed in our induction.

Next to the Egyptian, we may take up the Syrian fragments. According to Moschus,* the Phœnicians held, that, from the ETHER and Air, was produced the Intelligible god ULOMUS, in whose name perhaps we may trace the ancient name of AUM.† And this coincides with the intimation in Eusebius, that the

* Damas. Anc. Frag. 319.

† Perhaps, however, it may be simply the word עולם, signifying the Eternal.

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Kneph of the Egyptians, from whom Phthah proceeded, was the Agathodæmon of the Phœnicians. From Ulomus was produced CHUSORUS, probably the Amun Ra of the Egyptians. Sanchoniatho also informs us that they worshipped Pluto under the name of MUTH.* Photius† likewise states, that the Phœnician and Syrian Kronus was known under the names of,

EL, BEL, BOLATHEN.

The Sidonians, according to Eudemus, placed before all things,

CHRONUS, POTHOS, OMICHLES,

which Damascius translates as,

Time, *Love*, *Cloudy Darkness*,

but whom I take to be no other than the Khem,‡ Phthah, and Amun Kneph of the Egyptians.

* Anc. Frag. 15.

† Bibliothec. in Damascium.

‡ See Sanchoniatho's Egypto-Phœnician history of Kronus, so evidently identified with Ham, the son of Noah, as an avatar of Khem. Anc. Frag. 8. 11.

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The great deity of the Tyrians, was Arcles, the Heracles or Hercules of the Greeks.* This Heracles was a triple divinity, and is described by Hieronymus† and Hellanicus as a Dragon, with the heads of a Bull, of a Lion, and of a Man, with wings. To this the Orphic fragment, preserved by Athenagoras,‡ adverts, which states, that Water was the primeval principle, and from its subsidence ILUS, which he translates as Mud, proceeded, and from these sprung a Serpent animal, conjoined with the head of a Lion, in the midst of which was the countenance of the God Heracles or Kronus. The Egyptian Hercules is said by Plutarch to be placed in the Sun with Horus. Some further allusion to the Phœnician triad I believe is traceable in the three sons of Genus, given by Sanchoniatho,§ as

Fire, Light, and Flame,

* Herod. Leg. p. 71.

† Damas. Anc. Frag. 312.

§ Anc. Frag. 6.

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as this Genus was the son of Protogonus or Phthah.

Among the Philistines also, we find their chief god Dagon, who is the Ouranus of Sanchoniatho. It appears also that Baal was a triple Divinity:* while Chemosh, the abomination of the Moabites, and Baal Peor, of the Midians, seem to be the Priapæan Khem of Egypt, the god of Heat and generation. The Edessenes also held the triad, and placed Monimus and Azizus as contemplars with the Sun.

Proceeding eastward—of the ancient Chaldean learning, we have but few remains, though I trust that the time is not far distant when modern enterprize and ingenuity will open to us the numerous inscriptions still existing in the plains of Shinar. "The Babylonians," says Damascius,† "like the

* Baal Shilishi, or the "Triple Baal," II Kings, iv. 42.

† Anc. Frag. 313.

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rest of the Barbarians, pass over in silence the One Principle of the universe, and they constitute two, Tauthe and Apason, making Apason the husband of Tauthe, and making her the mother of the Gods." And from these proceeds an only begotten son, Moymis,* which he conceives to be no other than the intelligible world, proceeding from the two principles; and this appears to be the same as Phanes.

Of the Chaldean, Pythagorean, and Cabalistic theories upon the numbers, I shall here take no notice, further than to mention, that each of these sects set apart the three first of the ten integers under peculiar names to represent three of the great attributes of the Deity, as a triad; while the other seven integers were also held to be mysteriously endowed.

* In this we may probably recognize again the sacred AUM, dropping the Chaldean prefix M, signifying *From*.

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In the Chaldean oracles, which have been preserved in quotations by the later Platonists, we meet every where with the doctrine of a triad: and though I conceive the greater part of these oracles to be forgeries of a later date, yet, however refined or corrupted they may be, I have no doubt, but that in them many of the remnants of the ancient system have been preserved. The fundamental tenet, which they set forth, is, that a 'Triad shines through the whole world, over which a Monad rules,'* coinciding thus far with the ancient doctrine of the triplicated Horus Phanes or Intellect, proceeding from the Monad.

The triad of the Chaldean† oracles, is

Father, Power, Intellect,

and one passage‡ seems to imply that

* Παντὶ γὰρ ἐν κόσμῳ λάμπει τριὰς ἧς μονὰς ἄρχει. Oracles of Zoroaster, Anc. Frag. 246, No. 36.

† Anc. Frag. Ib.

‡ Ib. No. 37, 38.—See also Hermetic books, Ἥλιον νοῦν τοῦ θεοῦ. Pœmander.

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it had once been,

Air, Fire, Sun,

and to this extent, and in this mere outline of the doctrine, I believe we may rely: but by the latter Platonists, every scrap of ancient theology was bent to accommodate it to their own system.

The same doctrine is held in all the fragments of the Persian system which have come down to us. According to the Zendavest, under the name of ZEROUANE, or Time without bounds, the Persians recognized a first and original being.* From him ORMUZD and AHRIMAN proceeded, each independent of the other. Ormuzd is the being essentially good, the cause of all good, and living in primeval light. Ahriman was originally good, but lapsed from envy of Ormuzd.

Plutarch states, that OROMASDES and

* Zendavest and Boun Dehesh. See Duperron's Translation.

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ARIMANES were the two ruling principles, opposed to each other in ceaseless conflict; and were the *good* and *evil* principle respectively. They sprung from *light* and *darkness*, which of all things they most resembled. According to Eudemus,* they proceeded from Place or Time. Oromasdes was regarded as the whole expanse of Heaven,† and by the Greeks identified with Zeus.‡ He was esteemed the *Preserver;* and Arimanes, the *Destroyer*. Between them was placed MITHRAS,§ the Mediator,‖ who was regarded as the Sun, as *Light*, as *Intellect*, and as the maker and generator of all things.¶ He was a triple divinity, and was also said to have tri-

* Dam. Anc. Frag. 319.

† Herod. states, that the Zeus of the Persians was so regarded, I. c. 131,—XV. Strab.

‡ Arist.

§ Plut. de Is. et Os.

‖ Plut. Ib.—Zendav. Jescht de Mithra, III. Du Perron, 213.

¶ Porphyr. de Antro Nymp.

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plicated himself.* To him, of all animals, the Lion was consecrated; and in his honour were instituted the Leontine mysteries, in which the Sun was represented by the emblems of the Bull, the Lion, and the Hawk, united.†

There is a passage preserved by Eusebius,‡ of the Persian Zoroaster, in which the chief deity of the Persians is represented in all the attributes of Eternity, and Power, and Wisdom, but with the head of a Hawk. Strabo also mentions a Persian god, who is called Amanus, or Omanus,§ which has occasioned some inquiry among antiquarians, to ascertain to which of the Persian deities the title is applicable. In the Zendavest, the name translated Ormuzd, is always written Anhouma, and I would suggest that

* Plut. de Is. et Os.—Dionys. Areop. Ep. 7.

† Porphyr de Ant. IV. De. Abst. 16.

‡ Pr. Ev. I.—Anc. Fr. 239.

§ Ἀμανὸς, Strabo, lib. xi. Ὀμανὸς, or Ὦμανός, Ib. xi.

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these names are identical, and the same as Aum and Amun, the universality of whose divinity seems also to be alluded to in the following verses of Lucan—

Quamvis Æthiopum populis, Arabumque beatis Gentibus, atque Indis, unus sit Jupiter Ammon.*

The same doctrine was universally prevalent among all the more eastern nations.

Among the Chinese, from Tao, the sovereign incorporeal reason, sprung *two* beings, or, as some translate it, sprung a *second*, from which proceeded three, who created all things; and their sacred dragon is a compound of a bird, a wild beast, and a serpent. The same may be traced among the Siamese, the Burmese, and in the islands of Japan, among several of whom the Bull appears as a Destroying power, attempting to break the mundane egg.

Returning to the West, we find the same doctrines among the Germans, in

* Lucan, lib. ix.

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the Edda, among the Laplanders, and among the Celts.

Tacitus* says, that the god Tuisto and his son Mannus, were the founders of the German nation, and that Mannus had three sons, from whom the different tribes he mentions, derived their names.

In the ancient Edda of Sæmund, the chief god of the Scandinavian nations is Odin, and the most renowned of his sons is Thor, the god of Thunder, armed with his celebrated hammer. These are the two great gods in constant operation. But in the last catastrophe, called the *Twilight of the gods*, when they all perish, together with the evil demons who have opposed them, another BEING, who had not appeared before, "the powerful, the valiant, he who governs all things, comes forth from his lofty abodes to renovate the world, and to render divine justice: and he establishes the sacred

* De Mor. Germ.

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destinies, which shall endure for ever."* In the Edda of Snorro, ODIN, VILI, and VE, who are considered as the respective gods of Ether Light and Fire,† the rulers and preservers of the world, are stated to be the sons of BOR. The three sons of Bor are also mentioned in the more ancient Edda of Sæmund, as Odin, Hæmur, and Lodur, the creators, who, when they created the first male and female, Asc and Emblo, gave respectively, Odin the life, Hæmur the reason, and Lodur the blood.

The Laplanders worshipped the Supreme as Jumala, and placed three gods subordinate to him. The first was the celebrated Thor of the Edda; the second, Stor junkare, his vicegerent, who dispenses blessings to mankind, and was their common household god; and the third was Beywe, who is the Sun.

* Edda Sæm.—See also Butler's Hor. Bib.

† Edda Snor.

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If from the Scandinavian tribes, we proceed to examine the tradition of another large, but very dissimilar family of the North and West, we find the following very curious metaphysical theology among the Druids in Wales.

To perpetuate tradition, the Druids used certain triplicated sentences, which are called the Triads, in which they set forth every thing relating to their religion, history, and science, that the same might be committed to memory, and handed down with greater ease. The theological triads are as follows:—

I. There are three primeval Unities, and more than one of each cannot exist,

One God;
One Truth; and
One Point of liberty, where all opposites equiponderate.

II. Three things proceed from the three primeval unities,

All of Life,
All that is Good; and

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All Power.

III. God consists necessarily of three things,

The Greatest of Life;

The Greatest of Knowledge; and

The Greatest of Power—

and of what is the greatest there can be no more than one of anything.* These remind us extremely of some of the metaphysical speculations of the school of Kant; and indeed how frequently it is the case, that many of the most vaunted theories of modern times are but the thread-bare speculations of the past.

The Druids venerated the Bull and Eagle as emblems of the god Hu, and like the Jews and Indians, "made use of a term, only known to themselves, to express the unutterable name of the Deity, and the letters O I W were used for that purpose."†

* Meyrick's Cardigan, lxxix. † Ib. lxxx.

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But it is not among the civilized nations, nor upon the ancient continent alone, that we find these fundamental tenets. They appear equally among the barbarians of the Old, and among the savages of the New World.

The Peruvians worshipped a Supreme god, called VIRACOCHA. He was known to them also by the names of Pachacamac Soul of the world, Usapu admirable, and a variety of other names. As he was not visible, they erected to him no temples, nor offered to him any sacrifices, but they worshipped him in their own hearts; and esteemed him as an unknown God.* The Sun, however, was the great object of their worship: and at the great festival,† when certain bloody and consecrated bread was de-

* Acosta.—Faber.—See also M'Culloh's Researches, the work of an American gentleman, too little known in this country.

† Acosta, Nat. and Mor. Hist. 411. Herrera, iv. 348. M'Cull. 383.

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voutly eaten by the people, they exhibited three statues of the Sun, each of which had a particular name, which, as translated by Herrera, were respectively Father and Lord Sun, Son Sun, and Brother Sun. He says, moreover, that at Chucuisaca, they worshipped an idol called Tanga tanga, which, they said, was three in one.

From a comparison of all the preceding passages, we find, that the Heathen system universally recognized a triad of divine persons, and though there is much confusion respecting some points, the following are perfectly clear.

The FIRST of these great powers is Vishnu, Kneph, Oromasdes, Zeus, or Jupiter, which are evidently names of one and the same deity. He is the PRESERVING power, the Ericapæus, LIFE, or LIFE-GIVER in the Orphic, and the Father in the Chaldean triads, and physically the ETHERIAL POWER, the Spirit, Air,

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Ether, or Principle of Humidity. The color with which he was painted, if at all, was deep BLUE, or black. He is identified with the SUN; and, if we reject the variations, and retain only the similarities, we may say, that the EAGLE or Hawk was regarded as his especial Vahan or attendant.

From him, or in some of the theologies, from him and the Chaos, proceeded a SECOND deity, who is Brahma, Phthah, Horus, Pothos, Eros, Phanes, Apollo, or Mithras, the CREATIVE power, who proceeded from the former to reorganize the world. His distinguishing physical character is LIGHT; and as such, he is represented as breaking forth from the Etherial principle, and again as a child springing in a lotus from the navel of Vishnu, or as being born from an Egg, deposited upon the Chaotic waters, or sailing on their surface in a boat, a cup, or floating island. His metaphysical attribute is INTELLECT, or Love. His color is WHITE, or yellow:

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and he is more particularly, and especially, identified with the SUN. He is the same with Dionysus, or Bacchus. His Vahan, or attendant, is less clearly ascertained than the others. In the Indian, it is the Swan, or Goose. In the Persian, Syrian,* and Assyrian, it is the LION, as well as in some of the Egyptian forms, though the Egyptians gave to him several other animals, particularly the Hawk and Scarabæus: and in the Orphic and Greek, it is a triple combination. In the Persian system, which had been more particularly reformed, this deity was esteemed the Mediator.

The THIRD is Siva, Pluto, Serapis, Muth, Khem, Mendes, Arimanes, or Typhon. He is the DESTROYING AND REPRODUCING or Generating principle, the Metis of the Orphic, the Môt of Sancho-

* Lions were placed under the throne of the Egyptian Horus, and of the Syrian and Assyrian Adonis and Adad.—Horapollo, Pausanias, Macrobius.

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niatho. He is regarded physically as FIRE AND HEAT, and he was the ORB OF THE SUN; metaphysically, he was POWER and JUSTICE. His color is commonly RED, though Siva is sometimes white. His vahan, or attendant, is the BULL. How he came into existence is not mentioned in any of the systems we have produced. By the Saiva sects, he was esteemed the first primeval principle, and by many as the original producer of the Chaos. In process of time, however, he underwent the most singular transformation, and was regarded as the principle of Evil. He was also esteemed the OCEAN. In the catastrophes, which were supposed periodically to destroy the Earth, the destroying principle was considered to appear alternately, as flood and fire.* In the last catastrophe of the deluge, he appeared as the ocean, which,

* Berossus. Seneca, 3. Nat. Quest. 29, Aristotle and many authors cited by Censorinus. See also the authorities collected by Mr. Faber.

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according to a received opinion of the ancients, proceeded from the centre of the earth,* and retired to it again. And hence we find, that the destroying power, though properly Fire, is in every mythology sometimes regarded as the ocean, and in that respect his residence was esteemed the centre of the earth, that is, according to the Aristotelian system, the centre of the Universe. As Fire, the ultimate destroyer, he appears to have been originally regarded as the orb of the Sun, and centre of the Universe according to the Copernican system, which there is much reason to suppose had originally prevailed. But when the true system became obscured and lost, he appears still to have maintained his central position, regarded by the poets as Hades, but by the philosophers as a vivifying fire,† concentred in the earth.

* Lucian De Dea Syria.

† See the curious dissertation of Mr. Taylor on the passage in Aristotle, who states the doctrine

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These three were the distinct persons or forms of the Heathen triad: but they were not exactly separate gods; for they were each of them the Sun, the Aum and Brahm of the Indians, the Amun and Amun Ra of the Egyptians, and the Baal of the intermediate nations. But it was not the *orb* of the Sun that was worshipped, but it was the Sun regarded as the Soul of the world, and as a solar triad in three distinct persons, forms, or conditions; which were physically,—

the *blue* ETHER, the *white* LIGHT, and the *red* ORB OF FIRE,

who were regarded respectively, as the

PRESERVER, CREATOR, DESTROYER AND REPRODUCER,

and metaphysically, as the

of Pythagoras as Ἐπὶ μὲν γὰρ τοῦ μέσου πῦρ εἶναί φασιν, τὴν δὲ γῆν, ἓν τῶν ἄστρων οὖσαν, κύκλῳ φερομένην περὶ τὸ μέσον, νύκτα τε καὶ ἡμέραν ποιεῖν. "For they say that Fire is in the middle; and that the earth, being one of the stars, and circularly moving about the middle, makes day and night." De Cœlo, ii. c. 13.

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SPIRIT INTELLECT POWER
OR LIFE, OR LOVE, OR JUSTICE

of the world; a triad, which with the terraqueous globe, composed the Great Pantheistic, or Hermaphroditic deity of the Heathen, of which the chaotic matter was regarded as the body, and the solar fluid* as the soul.† This soul of the world, or Solar fluid, proceeded as

the Ether, the Light, and the Heat

of the more ancient systems, as

the Spirit, the Intellect, and Power

* See Sir W. Jones' Preface to his Hymn to Surya.

† The metaphysical speculations of the ancients upon the Microcosm bear a singular affinity to those upon the Macrocosm as explained. As the WORLD originated from two Independent and Eternal principles, viz. the Etherial fluid and the Chaos, or Mind and Matter; so MAN was regarded as a being compounded of an Intellectual, and of a Material substance, both of which were conceived by the ancients to have *pre-existed*, before they became united in the compound individual animal, the Man. When thus united, they appear to have conceived the Mind to exist as a triad of mental

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of the more refined and metaphysical, as the

Ericapæus, Phanes, and Metis

of the Orphic. This was the Amun Ra of the Egyptians, who assumed to himself the emblems, and proceeded in the forms of

Amun Kneph, Amun Phthah, Amun Seth, or Sothi:*

he was also

the triple Brahm of the Indians—
the triple Mithras of the Persians—
the triple Hercules of Tyre—
and the triune Tanga tanga,
the Father Son, Son Sun, and
Brother Sun of the Peruvians—

powers, the *Life or Emotions*, *the Intellect*, and the *Will or Power* of action, in analogy to the three persons of the Solar Triad.

* With respect to the Egyptian names, I have no doubt the following were of Hebrew original, נפח NPhH, Spirit or breath, as Nef; אור AUR Light, as Horus; and שדי SDI, or soft as SThI, or, as the Masorites point it, Shaddai, signifying all-powerful, or Almighty, as Sothi or Seth.

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and the deity, to whom the triple compound vahan of the Eagle, the Lion, and the Bull, was originally consecrated.

Clear as the preceding induction may appear thus far, we now meet with a difficulty, viz. that Brahma, Phthah, or Phanes, was in all the systems regarded as the Son of the Etherial principle, and at the same time as himself the Triad; which appears in some measure at variance with the preceding conclusion. But if we turn to the Scriptures, we shall find that which will throw light upon every part, and reduce to order every anomaly.

From the widely dispersed traditions upon the subject, it is manifest, that the circumstances of the Creation and of the Deluge were well known to all mankind previously to the dispersion: and the writings of Moses give to the chosen people, not so much a new revelation, as a detailed, authenticated, and inspired

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account of circumstances, which had then become partially obscured by time, and abused by superstition. The formless watery Chaos, and the Etherial substance of the heavens, enfolding and passing over its surface as a mighty wind, are the first principles both of the sacred and profane cosmogonies. By Moses they are reclaimed, as the materials created by the immediate agency of a superior Almighty Power: but Heathenism was a Pantheistic system, and by the Gentiles, they were regarded as two primeval principles of the nature of Male and Female, as Mind and Matter, which had independently existed, of themselves, from all eternity; and, which before the reorganization of a new world, lay motionless, as a watery Chaos, boundless and without form, over which the Ether hung in darkness, as the ancient night, or Erebus of the poets; but which, upon the reorganization of the world, were held to constitute, in mystic

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union, the great Hermaphroditic deity of the Heathens, the One, the Universe itself.

The first operation which occurred according to the Sacred historian, was, "And the Spirit of God moved upon the face of the waters; and God said, Let there be Light, and there was Light." But according to the heathen accounts, from the dark Ether, which lay motionless above the Chaos, the Light sprung forth; and the Chaos assumed under its plastic Power, the form of an Egg, or Globe. This light was the Brahma, Phanes, Horus, Phthah, or Mithras, of the Heathens. And it has been well suggested, by many of the old writers, that the meaning of the Hebrew passage is, that God caused the overhanging Ether, or mixture * of all the Etherial

* Erebus signifies *Evening* and *Mixture;* and is so applied in Sanchoniatho: and, indeed, it signified the dark etherial mixture in all the Heathen Theologists.

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elements to assume a motion, circulating round the chaotic mass, and that from this motion, the Light was not created, but beamed forth; and was used by the Creator as the material instrument, by which his subsequent operations were carried into execution, and the earth arranged in all its forms and beauty.

We are then instructed, that in the Heavens was set a tabernacle for the sun, or solar fluid, from which it thenceforth proceeded as from a centre. In the Heathen accounts, the Phanes, who had hitherto appeared but in the character of Light, becomes the Sun, the soul, and ruler of the world; which, while the ancient Ether was passed over, according to some systems, in silent meditation, was the great object of the Heathen worship, and was venerated in the triple capacity of Fire at its orb, of Light proceeding from it, and of Spirit, or Ether,

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returning to it.* And hence the Phanes appears both as Light and as the Triad.

Such was the original system of the Heathens: nor was it altogether a vain imagination: for that, which they worshipped as their triad, was but the type, the visible sign, by which things invisible were conveyed. It is, indeed, manifest from the Old Testament, and particularly from the original Hebrew, that the Persons of the Holy Trinity are constantly shadowed forth, physically, by the same natural powers, which constituted the triad of the Gentiles; and

* As I have elsewhere, in a Metaphysical Inquiry, examined at large the Philosophy involved in this hypothesis, which was revived and maintained by Hutchinson in the last century, it is unnecessary for me here further to advert to that part of the subject. But see his very curious observations on the Triad of the Gentiles, and the Cherubim, in which he deduced, as it were *à priori* from Scripture, tenets very similar to those here obtained by Induction.

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spiritually, not as the mere attributes, or faculties of a supreme mind, as represented in the Heathen triads, but as distinct persons, claiming such peculiar attributes, or respectively condescending, in the covenant of grace, to address themselves to such faculties of man. The FATHER is continually typified as a Fire, accepting the atonement and sacrifices, consuming and punishing the guilty, as the Lord of all power, and might, and justice, the fountain of Divinity, approached and known to us only through the mediation of the Son,—the SON as Light, as a Mediator, and a Teacher, enlightening the understanding, addressing himself more particularly to the Intellect, pointing out the distinctions of good and evil—the SPIRIT, as Spirit, or Air, a rushing mighty Wind, operating upon the affections, feelings, or emotions. We are commanded by the Christian faith to look to the Son for knowledge, to obey his instructions, and to accept the conditions of

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Salvation he has offered—to the Spirit, for grace to influence us in all our feelings, wishes, and intentions—and to the Father, our prayers are to be directed for pardon, for blessings, and for the power to act.

From the result of this inquiry, arises a most important question. How comes it that a doctrine so singular, and so utterly at variance with all the conceptions of uninstructed reason, as that of a Trinity in Unity, should have been, from the beginning, the fundamental religious tenet of every nation upon earth?

At the time of the advent, all these things had become so corrupted and obscured, that the learned paid but little attention to them, nor conceived that the gods of different nations had any connexion with one another: and it is only by the enlarged view of the fragments of all the different nations compared with one another, and indeed, by the light

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afforded us within the last few years, that we have been enabled to connect them, and obtain the complete system.

It is therefore utterly impossible that the Christian doctrine should have been derived from Heathen sources: or that Jewish peasants should have dived into the secrets of antiquity, and have acquired a knowledge which no one, even among the most learned of that age, ever suspected to have existed; that they should have rejected all the excrescences of a thousand years, have purified it of its materialism, and again given it as the fundamental tenet of religion, upon which was grafted the doctrine of an incarnation and atonement, fulfilling all the prophecies of old, and satisfying the universal expectation of a MESSIAH. The conclusion is irresistible—that the Trinitarian doctrine was a primary revelation, and was one of the original and fundamental tenets of the Patriarchal church. The then current account of

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the creation, combined with this physical triad, which shadowed forth to them the divine mystery, appears to have become the stumbling block, which set mankind to refine upon the truth; that hence they mistook the type for the architype, the solar triad for the spiritual, and they fell into the errors of attributing eternity to matter, of placing a Monad above the Trinity, with the Pantheistic opinion that the Deity was no other than the universe itself. The doctrine of the succession of worlds, the Metempsychosis, and Demonolatry would follow naturally enough by an extension of their system from the particular circumstances of the creation to those attendant upon the deluge: while the universal expectation of an incarnation was transferred from the future to the past, and appropriated to the Patriarchs,* and their three sons, who were considered deities incarnate.

* See Faber's Pagan Idolatry, and Macculloh's Researches.

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By the pride of false philosophy they forsook the truth of revelation, and sunk into materialism, into the worship of the elements, of man and beasts, and into idolatry with all its attendant abominations. 'When they knew God, they glorified him not as God; neither were thankful; but became vain in their imaginations, and their foolish heart was darkened. Professing themselves to be wise, they became fools; and changed the glory of the incorruptible God into an image made like to corruptible man, and to birds, and four-footed beasts, and creeping things. Wherefore, God gave them up to uncleanness, through the lusts of their own hearts.'*

It is a matter of very curious inquiry how mankind degenerated into the worship of animals, and the abominations of Idolatry. It will have been observed,

* Romans, i. 21.

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in the preceding remarks, that among the Heathens, the EAGLE was the Vahan of the *Etherial power*, the LION of the *Light*, and the BULL of *Fire, Heat, or the Solar Orb;* though these distinctions are not always very accurately maintained. These animals are in fact no other than the animals that composed the Cherubim; which in the Antediluvian, Patriarchal, and Jewish dispensations, were placed at the entrance of Paradise, and afterwards upon the Mercy seat of the Ark: they were deemed oracular: and above them, rested the Shechinah, the cloud of glory, the visible symbol of the presence of the Lord, who is represented as sitting between them, or flying upon them. The form of the Cherubim* was of a Bull, from which arose a human body, as a centaur, with four heads, that of a Bull, of an Eagle, of a Lion, and of a Man, with wings and

* Ezek. i. 10.—1 Chron. xxviii. 18.

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hands, and covered with eyes. In the heathen Cherubim, among other remarkable variations, the head of a serpent is often substituted for the human head. The Seraphim are considered to have been similar, and the Teraphim were of the same form, but smaller figures, which were set up by individuals in their own houses, and to which they resorted for answers.*

The Cherubim constituted the place of worship for all believers: they were termed the *Pheni Elohim*, the faces,† or presence of God; and from between them issued the oracles.‡ It would have been a singular omission, if the Heathen, as they went off from the Patriarchal worship, had not carried with them an institution so remarkable: accordingly we find the figures worked up into all their religious institutions, and

* "The Teraphim have spoken vanity."—Zech. x. 2.

† Zech. vii. 2.—Passim. ‡ Exod. xxv. 22.

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the memory of them retained, even to the present day.

From the quotations in the former part of this essay, we find that the Heathens distributed the Cherubic animals, severally to the respective persons of the Triad, as Vahans, upon which they sit or ride, or as consecrated attendants; and they not unfrequently confounded them with the deities themselves, and connected triplicated forms of various animals, as statues of their gods.* But these combinations are rarely given but to the Phanes,† Phthah, Mithras, and

* They are to be found in almost every variety, dedicated to the sun: Porphyry (de antro) gives a cherubic compound of a Lizard, or rather Crocodile, Lion, Dragon, and Hawk; and the Dog was very frequently combined: Martianus Capella (de Nupt. Philol.) says, that the solar ship had the head of a Lion on its mast, of a Cat upon its stem, and a Crocodile on its stern.

† We find them sometimes, though rarely, given to others; thus, the Cerberus is given to Pluto and Serapis: and Hecate and Ceres are triple figures, so is also *Metra*, the daughter of Erisicthon (Orus-eichton?) *Palæphatus*, c. 24.—

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Amun Ra, to that person who proceeds as, and is himself the triad: and all such combinations were conceived to be oracular.

The word Cherub was not pronounced as we commonly pronounce it, but as KeRuB, or KeRuV, with its plural formed by the addition of IM, or IN, and the Cherubim, as we observed, were called the PheNi Elohim, the faces, or presence of God.

If we trace these words in their several derivatives, we shall find a singular confirmation of the facts already proved. From PheN, or PeN, we have the *Phanes*, who was most particularly the triad; and to whom the triple compounds* were more especially dedicated.

Ov. Met. 8. All these were infernal powers; but this arises from the confusion alluded to between the generating and destroying power.

* See passages cited, Damascius, Orpheus, Macrobius, &c. Anc. Frag. In the Bacchantæ of Euripides, Bacchus is invoked to appear either as a Bull, a Dragon, or a Lion.

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From this is also derived the PaN of the Greeks, a compound figure, the great God of all things, the KeRoBates, PaN of Aristophanes.* This deity, Pan, was also deemed oracular, and had the reputation of uttering strange voices, and causing panics among men. In Italy, again, we may trace the term among the Latins, in their PeNates, which word is simply the plural of Phanes: these Penates were household gods, and oracular, in fact the Teraphim. The Lares were similar, and according to Nigidius in Arnobius,† were the same with the Curetes, or CoRyBantes. We find the word again among the ancient inhabitants of Italy, as FauNus, from whom, according to Probus, is derived the word

* Ranæ, act i. sc. 6.—See also Suidas. Κερατοβάτης, supposed to allude to his horny hoofs, was substituted afterwards when the meaning of the epithet was lost, though the epithet was still retained.

† Adv. Gent. lib. III.

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Fanum, a Temple. Faunus coincided with Pan,* and to him is also attributed the power of terrifying: and in this direction, in the progress of refinement, or corruption, the triple compound Phanes terminated in the Faun, a compound figure of the man and goat, but sometimes with no other trace of the original, than a tail.

In another direction, we find KeRBerus, the triple headed keeper of the gates of Hades, the entrance to the future life; so the Cherubim were placed at the entrance of Paradise, as it has been well observed, not to exclude the fallen race of man, but as a means of communication with the deity, and as a visible church, directing to eternal life. Cerberus is also said to be the Sun by Plutarch,† who also denominates Mithras, KRuPhius, and identifies Cha-

* Sextus. Aurel. Victor and Servius in Orac. Voss. de Id. 48.

† Plut. Is. and Os.

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RoPS* with SeRaPis, who was originally the Phanes and also represented as a Deity of a triple form,†

Εἷς Ζεὺς εἷς Ἀΐδης, εἷς Ἥλιός ἐστι Σάραπις :‡

though, like Pan, he is not unfrequently confounded with the Deity of Fire and the Solar Orb. The name was originally the SeRaPh, the same with the

* Bryant says, there were in Egypt many Charopian Temples.—The χαροπὸς λέων of Phanes, in the Orphic fragments, should be translated, not the *Joyful* or Serene, but the *Cherubic Lion*. See Anc. Frag. 299. Hom. Od. Λ. 610. and Hymn to the Mother of the Gods, v. 4. and to Hermes, v. 566. In Hesiod is also the description of the Chimæra, another Cherubic animal:

Τῆς δ' ἦν τρεῖς κεφαλαὶ, μία μὲν χαροποῖο λέοντος,
Ἡ δὲ χιμαίρης, ἡ δ' ὄφιος κρατεροῖο δράκοντος,
Πρόσθε λέων, ὄπιθεν δὲ δράκων, μέσση δὲ χιμαίρα.
Theog. 321.

one of its heads was that of a Lion, another of a Dragon, and the third of a Chimæra, viz. a Goat, the beast dedicated to Khem.

† Macrob. i. c. 21.

‡ Oracle preserved by Julian, Hymn. ad Solem.

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Cherub, and was a name common to all the gods,* and he is represented with the Cerberus at his feet.* ChiRON, another compound, who was a public instructor, and likewise identified with the Sun,* and the son of Kronus,‡ and brother of Zeus or Jupiter,§ is another form; and so is ChaRON, at the entrance of Hades.

By the substitution of the G, for the K, a curious deviation may be traced. In Spain we find GeRYoN, commonly a three-headed, but sometimes a four-headed ‖ monster, covered with eyes and hands,¶ subdued like Cerberus by Hercules. From this form of the word, the figures of the winged serpents placed in front of the temples,** were called Γρυπὲς,

* Plut. Is. et Os.

‡ Schol. in Lycophron. v. 1200.

§ Xenop. de Venat. c. 4.

‖ Aristophanes de Lamacho, 629.

¶ Plut. Is. et Os.

** The pediment of the Greek temples was called ἀετὸν and ἀέτωμα, from the expanded Eagle,

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or Griffins. The winged globe and serpent of the Egyptians are, in a Syriac fragment, attributed by Kircher* to Sanchoniatho, thus explained — 'that the globe denotes the divine nature; the serpent, his word which animates and impregnates the world; and the wing, the spirit of God, which vivifies it with its motion.' The name of Γρυπὲς, or Griffins, has continued in use to the present day, and may be detected in the Griffin, a compound of an Eagle and a Lion, one of the armorial insignia of Northern

which is said to have originally occupied it in the temples of Jupiter. There is in Plutarch a curious discussion respecting the word EI, inscribed on the Delphian Temple, I believe within the tympanum of the pediment. Considering that both the first and second reformation of the Greeks was indirectly derived from the Mosaic, I am tempted to suggest that it was originally the יה, the sacred name, pronounced Jah by the Masorites, but which as read backwards by the Greeks, would be exactly EI, and would more significantly bear the very same meaning which is propounded by Plutarch.

* Kircher, Ob. Pamph. p. 403.

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chivalry. This compound is very ancient. It was a form of Aroeris, according to Champollion,* and in some of the plates of Rosellini, we find the very same figure: and it is described by Ælian,† as a winged Lion, which, according to Ctesias, had an Eagle's back and head. From the oracular properties attributed to these figures, we have the Greek γρίφοι, riddles, and the saying Γραῦς σέριφος καὶ μάντις,‡ said to be taken from the field locust, deemed prophetic, and applied to any female, who grows old in celibacy; but I suspect that it was originally applicable only to the Pythia.

In another direction we find among the Egyptians the SPhiNX, which I suspect is only another variation

Sphinx volucris pennis, pedibus fera, fronte puella.§

The Greek Sphinx was a compound of a Woman, a Lion, and an Eagle; the

* Champ. Panth. † Ælian, c. 27.

‡ Suidas.—Hesychius has ἔριφος.

§ Ausonius.

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Egyptian omitted the Eagle: it was placed in the vestibules of the temples, and was introduced by Cadmus into Greece. It was said by the poets to deliver enigmas, but by others it was consulted as oracular.*

In Egypt we find also the Scarab consecrated to the Sun,† or Phthah, Horus, or Phanes: and it appears to have been deemed more particularly a living representative of the Cherub, and an emblem of the triad, as it was certainly of the Sun.‡ According to Horapollo,§ it was considered as a hieroglyphical representation of an only begotten son—of a father—and of the world, because it propagates its species without a female, by rolling up a globe of dirt, a fable symbolizing the generation of the world by Phanes. The same author tells us, that

* Laius is said to have consulted it as oracular.

† Horapollo—Porphyrius.

‡ Porph. iv. de Abst. c. 10. § Horap.

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there were three species of the scarab, sacred among the Egyptians, the Cat-formed, the Bull-formed, and the Ibis-formed.

In another direction, the cat-headed ThRiPhis, the contemplar of Phthah,* appears to be but the representation of the Teraph; and perhaps was the same cat-formed statue, which Horapollo † says, was, in Heliopolis, consecrated to the Sun. But in the great temple of Apollo at Delphi, we find a more exact and curious counterpart of the original, from which the Orphic reformers drew their rites. This temple was dedicated to Apollo *Pythius:* and in the adytum was placed the Tripod, through which proceeded the oracular vapour, which is evidently an imitation of the Shechinah above the Cherubim. The tripod itself, whatever in after times it might have been, was not originally a three-footed

* See Mr. Wilkinson's Mat. Hier.

† Horapollo.

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stool, but was a chest or ark filled with stones,* or a seat.† Respecting the derivation of the word tripod, Porphyrius ‡ gives the legend, that 'Apollo was the son of Silenus, and was slain by the Python, and buried in the tripod, which takes its name from the three daughters of TRioPus, who there bewailed Apollo.' In other parts Apollo himself was called TRioPius, and tripods were distributed as prizes at the Triopean games. The similarity runs so closely, that we should not be far from the truth in conceiving that the tripod was originally an imitation of the Ark and Mercy-seat,§

* Schol. in Aristoph. Lysistr. The Athenian laws were engraved on triangular stones, called KuRBeis. See Suidas, and several references in Harwood. They are said, by Theopompus, to have been invented by the CoRyBantes.

† Cœlius, Lect. Ant. lib. viii. c. 15.

‡ De vit. Pythag. 10.

§ The cover of the tripod is said to have been round, called ὅλμος. See Schol. in Aristoph. Plut. Act i. sc. 1.

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with the Tables of Stone within, the Teraphim upon it, and the Cloud above, supplied by the natural vapour of the chasm.

The cherubim may be found in every part of the heathen world, and to the abuse of them, I believe, may be traced the worship of animals. The heathens originally fell into materialism, and worshipped the created ethereal elements instead of the Creator; and in process of time descended another step, by substituting as objects of adoration, the very animals which they originally regarded but as types of their ethereal gods.

The knowledge of the origin and meaning of their religion, and of their sacred rites, gradually declined among the heathens; and became more and more overlaid with fiction and obscured, as the people degenerated into idolatry. Yet there was a light still maintained in the world to which the nations might

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resort. And the chosen people appear to have been placed in such positions, and their history to have comprised such adventures, as were best calculated for the general dissemination of truth among the nations.

The geographical situation of Palestine, chosen it may be for the seat of universal empire hereafter, is the most remarkable upon earth for the facility of communication which it affords with every quarter of the globe. At the time of the Advent, it formed as it were the boundary of the rival empires of Rome and Parthia, subject to Rome, but holding an intimate connexion with its colonial offspring within the Parthian dominions. And its situation was, at that time, not more excellently adapted for the universal diffusion of the Gospel, both in the East and West, than it was for the general instruction of mankind in times of old, when it formed so considerable a part of the high road of communica-

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tion between the empires of Egypt and Assyria. About the beginning of the eighteenth dynasty, the most brilliant period of Egyptian history, the descent of the Israelites into Egypt took place, and the sway of Joseph diffused the light of Revelation over that land; and towards the conclusion of that dynasty the Exodus was effected: and the fame of the miraculous exploits of Moses and Joshua was wafted with the Danaan colonies to Greece, with the fugitive Canaanites to the West, and carried by the Israelites themselves into the East. There is express historical evidence† to shew that the colonies of Danaus and Cadmus went out of Egypt with the children of Israèl, and were of the mixed multitude that parted from them in the desert, whence they pursued their course to Greece. And to this event may be traced the first reformation and the first era of Greek

† Diod. Sic. See Anc. Frag. p. 184.

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Theology and Literature. Orpheus, their great instructor, was the disciple of Musæus,* and carried with him that mixture of Mosaic revelation and Egyptian superstition, which is still discernible in all the Orphic fragments, and which in the course of time melted down into the fabulous mythologies of Hesiod and Homer.

During the revolutionary violence consequent upon the downfall of the ancient Assyrian empire, the same merciful Providence kept up a communication with the kingdoms which sprung out of its ruins, by the mission of Jonah to Nineveh,—by the connexion of the princes of Samaria with Syria,—by the disper-

* That this Musæus was Moses, see the very curious remarks of Lord Herbert of Cherbury, and the extraordinary Orphic Fragment addressed to Musæus, beginning Φθέγξυμαι οἷς θέμις ἐστι: and from some fragments still remaining, I have no doubt but that the celebrated Phœnician sage, Moschus, was the same person.

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sion of the ten tribes over the territories of the Medes and Assyrians by Salmanaser,—and upon the full re-establishment of the Chaldean empire at Babylon, a knowledge of the truth was diffused far and wide by the captivity of the Jews themselves.

The conversion of Nebuchadnezzar, and the decrees of himself and his successors, both of the Chaldean and Persian line, in favour of the Jewish dispensation, had a very powerful effect upon the religious and philosophical sentiments of the East. And whether it originated with the captivity of the Jews, or proceeded from the previous dispersion of the Israelites, the reformation was general throughout the civilized world. Into Persia and Chaldea the reformation was introduced by Zoroaster;* into China,

* The history of Zoroaster is a complete compound of that of Daniel, and Shadrach and his companions; in his favor with the king—his religious purity of sentiment—the conspiracy of the

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Japan, and Siam, about the same time by Confucius,* Xaca, and Somnocodom; and into India by that personage, who assumed, or to whom was attributed, the last Avatar, under the name of Buddha: and it was at this time that the Upanishads and Puranas of the Vedas were compiled, and indeed all their sacred volumes written or retouched. In Egypt the reformation was forced upon the natives by the Persian conquerors: and the general destruction of their images and temples, and the restrictions which

Magi—the lion's den—the fiery furnace—and his final triumph and reformation in the reign of a Darius. His name in the Zend is always written Zerethaschtro according to Duperron, and Zaratashtru according to the English pronunciation of Hyde. His name looks extremely like a Persian version of the Babylonian Belteshazzar, *Zor* being the Persian Shah equivalent to Bel, (as in Nebo Zar Adon,) both signifying Lord, and *Tashtr* a Persian substitute for Teshazzar.

* Martini says, that this Confucius according to some, was born B. C. 550; but according to Le Compte, B. C. 483.

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were laid upon the ancient worship of the conquered, almost abolished the priesthood, and obliterated their old religion. The reformation was also carried by Pythagoras into Italy and Greece; and introduced the second era of Theology, Philosophy, and Literature, that distinguished Greece.

The effect of this reformation was to give a higher and more metaphysical character to the speculations of the Philosophers; by blending the newly acquired truths with their old philosophy: and such a character was long retained. The Persians seem to have profited by it most: and whilst it appears to have re-animated their zeal against idolatry, it led them to convert the two independent principles of Mind and Matter into spiritual agents in opposition to one another, and to have revived the unmingled worship of the Sun and Fire, at first but as an emblem and image of the Supreme, though it soon again degene-

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rated into the Sabaism of old, the substitution of the creatures for the Creator. By this revolution, the ancient character of the Destroying principle of the Heathens was almost lost, as he was in the East converted into Arimanes, and in the West confounded with the ancient Chaos, and in both considered as the origin of Evil.

A summary of the Pythagorean doctrines may be found in the commencement of the celebrated treatise of Timæus Locrus.* The *Forms*, that is, the Ideal world, and *Matter*, were now substituted for the ancient Duad; superior to which was placed the Efficient Cause as the Monad, Deity, or Demiurgus. This Duad was, nevertheless, regarded as two eternal and independent principles, and by their combination the Deity formed the sensible world, a living animal, composed of soul and body. Sub-

* See Anc. Frag. p. 301.

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ordinate to the Duad are some faint traces of a Pythagorean Triad, which with respect to the Duad occupies the same relative situation as in the more ancient systems. Ocellus Lucanus gives it as Generation, Summit, Termination; and Aristotle says, that according to the Pythagoreans, the Universe and all things are bounded by Three, and that the End, the Middle, and the Beginning, includes the enumeration of every thing, and fulfil the number of the Triad.* By this introduction of the Ideal world, and the elevation of the deity above the duad, the system lost something of the gross materialism which had hitherto obtained, but at the same time was lost all knowledge of the ancient triad; which was now replaced by such triads as I have here cited, which were more conformable to the Pythagorean mode of philosophizing.

The doctrines of Plato were derived

* See Pythagorean fragments collected Anc. Frag. p. 301, 308.

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and differ but little, from the preceding. If we admit the Parmenides and the Timæus to embrace his complete system, GOD and MATTER, two originally independent principles, are held to be, as it were, the extremities of that chain of being which composes the universe. Subordinate to the God, we have the Intelligible world of Ideas or the Forms, commencing, as the latter Platonists insist, with the Intelligible triad: but whether Plato regarded this world of Ideas in the abstract as subsisting only *within* the mind of the Deity, or whether he attributed to it a distinct existence *without* the Mind, comprehending different orders of divine super-essential beings, may well be questioned. When the Deity framed the universe, he looked to this ideal world as the exemplar, in whose likeness he constructed his new work. He impressed the disordered material Chaos with the Forms, and rendered the world a living animal,

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after the pattern of its ideal prototype, consisting of a soul endued with Intellect, and of a body of which all beings comprehended in it, gods, men, animals, or material species, are but the concrete individuals, the abstract ideas of which unalterably subsist in the intelligible world. Though still supposed to continue in existence, the Deity, as in the more ancient systems, retires as effectually from the stage as did the ancient Ether when superseded by the Phanes. And all the mundane operations are carried on, as before, by the Soul of the world. But that soul of the world was no longer regarded as the Triad. While the Stoics and other schools retained the gross materialism of the ancient doctrines, and looked not further than the world itself, Plato had obtained from the Pythagoreans a glimpse of higher powers; and though he held the sensible world to be a Deity comprehending within itself subordinate deities, he held

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all these to be created beings; he looked upon the visible forms and substances to be but fleeting and ever varying shadows, the mere resemblances and types of those, which eternally subsisted in the abstract—as the soul of the world, the sensible and ever present deity, was but a type or resemblance of the supreme. With respect to the soul of the world, it does not appear that Plato and the Pythagoreans entertained a more sublime conception of it, or indeed of soul in general, than the gross materialism of a subtile Ether.

Much as has been said upon the Platonic trinity; I must confess that I can find but scanty traces of that doctrine in the writings of Plato.

The passage which is supposed more particularly to bear upon the subject is to be found in his Epistle to Dionysius,* which, if translated in a manner most

* Plato, Epis. II. See Anc. Frag. 334.

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favourable to such an interpretation, runs as follows:—"You say, that in my former discourse I have not sufficiently explained to you the nature of the first—I must speak to you in enigmas, that, in case the tablet should meet with any accident either by land or sea, no one, without some previous knowledge of the subject, may be able to understand its contents. This then is the explanation. About the king of all things all things are, and all things are on account of him, and he is the cause of all beautiful things. But second things are situated about that which is second; and such as are third in gradation about that which is third. Wherefore the human soul extends itself towards these things to learn of what nature they may be, examining those which are akin to itself; none of which, however, it sufficiently comprehends, for about the king and those natures of which I spoke, there is nothing of this kind: that, however, which is after this,

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the soul can speak of." With the exception of some obscure allusions in the beginning of the second hypothesis of the Parmenides, and a fragment of Amelius,* which expressly mentions the three kings of Plato (perhaps in some passage not now extant) as identical with the Orphic triad, I believe there are no other passages in Plato that can be truly taken to advert to the triad, though there are many which refer to the two primeval principles of the Ether and Chaos and their Offspring, as the Bound the Boundless and the Mixed in the Philebus. With respect to the passage above cited, I believe it simply refers to the different gradations of the Platonic system, as explained by Plutarch, first to Deity—secondly to the Intelligible or Ideal world, or Intellect—and thirdly to soul and the soul of the world; the comprehension of any one of

* Anc. Frag. 305.

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which is asserted to be beyond the grasp of the human soul, though the comprehension of itself and of the material species below it may be within its compass.

So far indeed from any such doctrines being maintained by the Pythagoreans or in the Academy, the fact is, that one of the persons of the ancient triad had been completely lost, and from the time of Plato to that of Ammonius Saccas in the third century, no disciple of his school appears to have been aware that such a doctrine was contained in his writings: and all that we can find after his time, are but such slight and vague allusions as might be expected among Philosophers, who reverenced an ancient tradition, and were willing, after they had lost the substance, to find something to which they might attach the shadow. Indeed, if such a doctrine had been held by Plato, it could scarcely have escaped the knowledge of Cicero, or have failed

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to have appeared in some part of his philosophic writings.

The Christian era is the last great epoch of Grecian literature. In the first century, Philo, an Alexandrian Jew, had attempted to expound the Scripture on Platonic principles. After the promulgation of the Gospel, while many of the orthodox fathers attempted to explain Plato upon Christian principles, and to urge upon the Heathens the futility of cavilling at a mystery which their greatest philosophers had attained to and received, the various heretics in the first ages reversed the process, and attempted to bring the Scriptures into a conformity with Plato. They were both misled by the word Logos,*

* St. John uses it as a translation of the well-known Hebrew words קול and דבר, signifying the Voice or Word; but Plato as Intellect or Reason. Originally, I believe, there was a connexion; but I do not conceive that Plato had the slightest glimpse of it.

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used by St. John and Plato, and both made the Platonic trinity to consist first of God, secondly of the Logos or Nous, the Reason or Intellect, and thirdly of the Soul of the world: and it is true that Plato did look upon each of these three as divine, but they did not constitute the ancient Triad, nor were they regarded by him as a trinity. The notion, however, was fixed upon Plato in spite of all his then, and subsequently, professed followers, who uniformly rejected the hypothesis; and it has been taken up and often insisted upon in modern times, particularly by Cudworth. Doctor Morgan, in his essay upon this subject, satisfactorily refutes the notion, that Plato regarded the Logos as the second person of a trinity, by an examination of all the passages from Plato cited in its favor. The celebrated passage in the Epinomis of Plato—Ξυναποτελῶν κόσμον ὃν ἔταξε λόγος ὁ πάντων θειότατος ὁρατόν usually rendered, "Perfecting the visible world,

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which the Word, the most divine of all things, made"—refers to a very different subject. The inquiry in this part of the dialogue relates to the knowledge of number, without which it is asserted a man cannot have λόγος, reason; and if destitute of reason, he cannot attain wisdom. The God, which imparted to man the knowledge of numbers, is the Heaven, for there are eight powers contained in it akin to each other, that of the Sun, of the Moon, and Planets, to whom, he says, equal honour must be assigned;—"For let us not assign to one the honour of the year, to another the honour of the month, and to others none of that portion of time, in which each performs its course in conjunction with the others, *accomplishing that visible order which* REASON, *the most divine of all things (or of the Universe,) has ordained.*"

The no less celebrated passage from the Philebus, Ὅτι νοῦς ἐστι γενούστης τοῦ

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πάντων αἰτίου, by which it is supposed that the consubstantiality of the Logos with the first cause is asserted, relates to the *human mind*, and is the conclusion of an argument, which proves, that as ordinary fire is derived from the elemental, and the human body from the elemental body of the world, *so is the human mind akin to, or of the same nature with* the Divine mind, or Soul of the universe, *the cause of all things.* These and other less celebrated passages of Plato, when examined in conjunction with their context, afford us, as Dr. Morgan justly observes, no more foundation for supposing that Plato held the doctrine of the Trinity than the following very curious passage, which he produces from Seneca, gives us ground to suppose that it was held by the Stoics: "Id actum est, mihi crede ab illo, quisquis formator universi fuit, sive ille *Deus* est *potens omnium*, sive *incorporalis Ratio* ingentium operum artifex, sive

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divinus Spiritus per omnia maxima minima, æquali intentione diffusus, sive fatum et immutabilis causarum inter se cohærentium series."*

In the second century arose the Gnostic Heretics, who adopted the Ideal world as part of their religious creed. The different sects of the Gnostics went far beyond the Grecian sage, and sought in the sublimer flights of Oriental mysticism, the doctrines, to which they looked upon the writings of Plato merely as introductory essays, and they treated his followers with a contempt, against which the vanity of a philosopher is seldom proof; and as long as these sects and schools existed, a bitter enmity prevailed between them. The Gnostics gave at once a real *existence* to the Ideal world, and continuing the chain of being from the Supreme, through numerous orders of Eons, or personified abstract ideas, of which the second and third

* Consol. ad Helv. c. 8.

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persons of the Trinity were held to be the first and second Eons, and from thence to the lowest material species, founded that daring heresy which so long, in different forms, disturbed the tranquillity of Christendom. With this spurious Platonism of the fathers the Arian heresy is likewise intimately connected: and it is curious to observe the Arian and Orthodox illustrations of Eusebius and Epiphanius. The former illustrates the Trinity by the Heaven, the Sun, and the Spirit; or the Heaven, the Sun, and the Moon, which were the leaders of innumerable hosts of spirits and stars, evidently derived from the prevailing notions of the Fathers relative to the Platonic trinity: whilst Epiphanius declares, that this great mystery is properly understood as Fire, Light, and Spirit or Air reveal it to us.

But the internal heresies of the Church were not the only ill effects which the misguided zeal of the fathers, in forcing

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upon Plato the doctrine of the Trinity, brought about. Though it is possible, that by pointing out some crude similarity of doctrine, they might have obtained some converts by thus rendering Christianity less unpalatable to the philosophical world of that day, yet the weapon was skilfully turned against them, and with unerring effect, when the Pagans, boldly denying the radical materialism of their system, took upon them to assert that nothing new had been revealed in Christianity; since, by the confessions of its very advocates, the fundamental doctrine was contained in the writings of Plato.

In the third century, Ammonius Saccas, universally acknowledged to have been a man of consummate ability, taught that every sect, Christian, Heretic or Pagan, had received the truth, and retained it in their varied legends. He undertook, therefore, to unfold it from them all, and to reconcile every

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creed. And from his exertions sprung the celebrated Eclectic school of the later Platonists established at Alexandria. Plotinus, Amelius, Olympiodorus, Porphyrius, Jamblichus, Syrianus, and Proclus, were among the celebrated professors, who succeeded Ammonius in the Platonic chair, and revived and kept alive the spirit of Paganism, with a bitter enmity to the Gospel, for near three hundred years.

The doctrines of the later Platonists are curious, not only in themselves as a system, but as exhibiting the influence exerted by Christianity upon the philosophical tenets of its opponents.* The gross materialism of the ancients was boldly denied, and ingenuity was strained to the utmost to clothe, in far-fetched allegories, the fables, and to refine away the practices, which, before the introduction of Christianity, had disgraced

* See an excellent paper upon this subject in the Quarterly Review for July, 1836.

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the world. I believe I cannot better set forth the system of the later Platonists, than in the words of my late learned and respected friend, Thomas Taylor, the Platonist, in which he once decked it forth to me as an invitation to adopt it, and as he himself believed it.*

"The supreme principle, or First Cause of all things, is perfectly simple, unindigent, and beneficent. He is above all essence and being, ineffable, incomprehensible, and unknown; and, as Proclus beautifully observes, 'He is the God of all gods, and the Unity of all unities. He is more ineffable than all silence, and more unknown than all essence. He is holy among the holies, and concealed among the intelligible gods. He

* It is extracted from a dialogue, in which Mr. Taylor undertook to prove that the Platonic system was a revelation demonstrable upon extrinsic evidence, subsequently confirmed, and, moreover, susceptible of scientific demonstration. The dialogue was carried on in writing to a considerable length, but was left unfinished at his decease.

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is denominated the ONE, denoting that all Being proceeds from him: and the GOOD, as denoting that all things tend to him, as the ultimate object of desire.

"From him proceeds an unbroken chain of Being from first to last. There is no vacuum intervening, either in incorporeal or corporeal natures. Every thing subsists either

according to *Cause*, or
according to *Hyparxis*, or
according to *Participation*.

That is, every thing may be considered, either occultly in its *cause*, as Light, when viewed subsisting in its fountain, the Sun;—or as subsisting openly in its own order *according to what it is*, as Light immediately proceeding from the Sun;—or *as participated* by something else, as Splendor communicated to other natures by this Light.

"In this vast chain of being, each order subsists *as it is* according to Hyparxis; its summit being united causally

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with its next superior order, and its extremity coalescing, through an intimate alliance by participation, with the summit of the next inferior to itself. Nevertheless, the One is not to be connumerated with the chain, as transcending; but all the processions which constitute that chain are causally dependant upon the One.

"Each order generates *similars* prior to dissimilars, and, before it generates or gives subsistence to processions, far distant and separate from its nature, must constitute things proximate to itself according to essence, and conjoined to it through similitude. Hence the ONE must generate from itself, prior to every thing else, a multitude of natures characterized by *Unity;* and these natures are no other than the Gods. The first procession from the One is the *Intelligible Triad*, which is super-essential, and possesses an inconceivable profundity of union both with itself and its

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cause. And hence it appears to the eye of Intellect, as one simple indivisible splendor, beaming from an unknown and inaccessible fire.

"The first procession, therefore, is the *Intelligible Triad;* the second, the *Intelligible, and at the same time, Intellectual Triad;* the third is the *Intellectual Triad.* The first of these three orders only is super-essential and ideal. The last of the Intellectual orders is the Demiurgus, Jupiter, the fabricator of the universe, the first principle of the supermundane, empyrean, etherial, and material worlds. He holds the same relation to this Sensible world, as the ONE does to the Intelligible Universe. The corresponding orders in the Sensible world, or this world of beings, immediately proceeding from the Demiurgus, are

IV. The Supermundane Triad.
V. The Liberated Triad.
VI. The Mundane Triad.

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And these are again succeeded by inferior orders of Demons, Heroes, Men, Animals, Plants, Material Species, and Formless Matter, or the Chaos."

Such was the ingenious system of the later Platonists. And in ancient writers there are some grounds for this division of the deities, made by the later Platonists, into super-essential and essential. The Brahmins would, in the language of the later Platonist, class the three great deities, Vishnu, Brahma, and Siva, as super-essential powers, while their counterparts, Indra, Surya, and Varuna, would be ranked as essential or mundane, or perhaps material gods: and the same might have been maintained by the ancient Egyptians, who, like all the other Heathens, in process of time, multiplied their gods without any kind of restriction. Plato himself leans to the same hypothesis in the Timæus, in which the demiurgus is represented as addressing the inferior gods,

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whom he has made, and committing to them the care of all the sublunary world. It may also be obscurely traced in the Parmenides, where, in the first hypothesis, all essential qualities are negatived of the supreme, but are admitted in the second hypothesis, where *being* or essence comes under consideration. It appears to me, however, to be of no great antiquity, though it was eagerly adopted by the later Platonists to relieve themselves from the manifest materialism of the Heathen system. Instead of embracing the original and unadulterated truth, which was again tendered to them by the Gospel, they received it not with the humility of the learner, but with the pride of the philosopher, and selected certain tenets, which they blended with their own false system of theology.

The authority of Julian gave the later Platonists importance for a time. But their system was confined to a few speculative men, and was neither received

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nor comprehended by the people.* The Platonic schools were at length closed by the edict of Justinian; and seven wise men, the last lights of Platonism, Diogenes, Hermias, Eulalius, Priscianus, Damascius, Isidorus, and Simplicius retired indignantly from what they deemed the persecution of Justinian, to realize the shadowy dreams of the republic of Plato, under the Persian despotism of Chosroes;† but they returned in disappointment, and passed the remnant of their lives in obscurity, unpersecuted and unregarded by the emperor, or by the church, which from that time comprised within its bosom the whole Roman world.

This was the last faint effort of expiring Paganism: and whatever might have been the corruptions that thenceforth

* See an excellent article in the Quarterly for 1836, upon this subject.

† For the interesting particulars of this singular transaction, see Gibbon, c. xl.

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crept into the church, this was at least effected—the gross materialism of the Heathen was suppressed ; the worship of the ethereal powers and of animals was overthrown for ever; and the fundamental tenets of the truth were placed upon a rock, against which the gates of hell cannot prevail.

Victor Io, Bellator Io, tu regna profunda,
Tu Maneis, Erebumque, potestatesque coerces
Aerias, lethumque tuo sub Numine torques.

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CHRONOLOGICAL INQUIRY

INTO THE ANCIENT HISTORY OF EGYPT

BY ISAAC PRESTON CORY ESQ.

FELLOW OF CAIUS COLLEGE

CAMBRIDGE

LONDON

WILLIAM PICKERING

1837

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LONDON.

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CHRONOLOGICAL INQUIRY.

Chaos of ruins! who shall trace the void,
O'er the dim fragments cast a lunar light,
And say, "here was, or is," where all is doubly night!

The double night of ages, and of her,
Night's daughter, Ignorance, have wrapt and wrap
All round us; we but feel our way to err:
The Ocean hath his chart, the Stars their map,
And Knowledge spreads them on her ample lap:
But Rome is as the desert, where we steer
Stumbling o'er recollections; now we clap
Our hands, and cry, "Eureka!" it is clear—
When but some false mirage of ruin rises near.

The following observations upon the Chronology of Egypt, I beg to lay before the literary world with much diffidence; not only because I feel myself compelled to differ in opinion from many whose acquaintance with the subject I

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know to be superior to my own, but because in a matter, where so few facts are before us, we must necessarily fill up the gaps with conjecture, and are apt to flatter ourselves with discoveries, and give importance to analogies, which in themselves are perhaps trifling and absurd. The first difficulty I would meet, by offering this little treatise simply as a collection of hypotheses, upon which I would lay no great stress, and which I am ever ready to retract; and I shall feel amply gratified, if any of the hints thrown out should be improved by others more able than myself. The other difficulty I have endeavoured to obviate by pursuing the following method of investigation, which, in every branch of literature and science, I take to be the simplest and the surest method of obtaining truth; that is,—instead of casting away the standard opinions of the world, and running idly after every hypothesis that may present itself,—to assume those

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opinions in the first instance to be correct, to examine them patiently, and modify them gradually, or, if necessary, abandon them entirely, upon the facts arising in the course of the investigation.

For the present, then, I will assume as a basis, the marginal chronology in the authorized version of our Bible, which differs but little from the annals of Abp. Ussher; and as every correction or confirmation of any chronological point must depend chiefly upon the number of coincidences produced, I will first endeavour to determine an outline of Egyptian History, by ascending from the fixed and acknowledged points, in which it comes in contact with the Jewish; and then, in descending, to correct or modify the outline, by giving those coincidences that appear confirmatory of the results, and which are so widely scattered over the Bible, and among the Greek antiquarians, and upon the monuments still existing in Egypt; avoiding,

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as much as possible, every thing already before the world.

The Marginal Chronology places

The Creation	B.C. 4004
The Deluge	2348

and it gives the following historical points, which are almost universally admitted, from which we may ascend :—

The Subjugation of Egypt by Cambyses. . .	525
The Captivity by Nebuchadnezzar	593
Pharaoh Necho, in the 26th dynasty of Egypt	610
Shishak, who invaded Judea in the reign of Rehoboam	971

There is, then, an interval of 361 years between the invasions of Shishak and Pharaoh Necho. If we reckon by the oldest edition of Manetho, that of Africanus,* from whom the others are copied, the addition of these 361 years above the reign of Necho, brings us 40 years above the reign of Sesonchis, the first king of the 22d dynasty, viz., of the

* All the different editions of Manetho, with all their various readings, are collected in "The Ancient Fragments,"

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Bubastite kings. But, if we correct the reign of Bocchoris, the single king of the 24th dynasty, to whom Africanus gives but six years, while all the other editions allow him 46 or 44, we shall find this Sesonchis exactly coinciding with the Shishak of the scriptures; and this coincidence is perfectly confirmed by a representation of this king of Judah, on the monuments, as one of the captives of Sheshonk.

Starting again from Shishak, as from a fixed point, the authorized version gives the date of the Exodus as B.C. 1491, allowing an interval of 520 years between the catastrophe of the Red Sea, and the invasion of Shishak. Now according to all the catalogues of Manetho, the addition of these 520 years (deducting some for the years of Shishak before he undertook his expedition against Judah) brings us on the shortest calculation into the reign of Amenophis, the last king of the 18th dynasty, or, on

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the longest calculation, into that of his predecessor, Ramesses II., thus placing the Exodus towards the end of the 18th dynasty; and in this view of the case, Archbishop Ussher and many other antiquarians coincide.

Ascending from the Exodus, B.C. 1491, to the commencement of the administration of Joseph, 1715, the interval is 224 years; and this addition would place the administration of Egypt by Joseph about the beginning of the 18th dynasty.

It has been often observed, that it is clear from the behaviour of Joseph to his brethren, his charge respecting them that they were spies, and the circumstance of every shepherd being an abomination to the Egyptians, that Egypt in his time had been but recently delivered from the scourge of the Shepherd kings, a race of foreigners who invaded, and retained possession of the country for a considerable period of time. The Shepherd kings and people are said by

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Manetho to have been driven out by Alisphragmuthosis, (perhaps, more correctly, Misphragmuthosis,) and his son, Amosis or Tethmosis. The children of Israel on their arrival were placed in the land of Goshen, and at no great distance from the royal city; and as they still dwelt in it after they had so exceedingly multiplied, it must have been a very considerable tract. Manetho says, they were permitted to live in a city or place, called Avaris, containing about 10,000 acres, which had been left unoccupied by the departure of the Shepherds: and that this spot, so near the royal city, was still unoccupied, and given to the Israelites as the richest of the land, and adapted to shepherds, is confirmatory of the assertion, that the Shepherds had but recently retired.

The only authentic historical account we have received of the Shepherd's first invasion and expulsion, is that of Manetho, preserved by Josephus: and this

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expressly states that Alisphragmuthosis, the king who preceded the 18th dynasty, drove the Shepherds into Avaris, and there besieged them; and his successor, who is called Amosis or Tethmosis, the first king of the 18th dynasty, was the first person to whom they capitulated, after a lengthened siege. And this will very accurately agree with the statement of Ptolemæus Mendesius, who says, that the Amosis, who overthrew the city of Avaris, lived in the time of Inachus: and it is an opinion, which has been plausibly entertained, that the colony which left Egypt under Inachus, was indeed a branch of the Shepherd race.

If this be so, the predecessors of the 18th dynasty must have been the Theban princes, who, according to Manetho, had begun and carried on the war, and had been contemporaries with the Shepherds.

The duration of the Shepherd dynasty, which is the 17th dynasty of Manetho, is variously stated. By Josephus

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260 years are allotted, by Africanus 284, by Eusebius 103, in which he follows the Old Chronicle, which, as well as all the lists of Eusebius, allows but 4 instead of 6 Shepherd kings. It is, however, expressly stated by Manetho, that the entire duration of the Shepherd dynasty, in which he evidently includes both the Shepherd kings and the Israelites, is exactly 511 years, which, added to the year of the Exodus, B.C. 1491, fixes the first invasion of the Shepherds about the year B.C. 2002.

The Old Chronicle, which I look upon as one of the most authentic documents that have come down to us, and which was evidently so regarded by Eusebius, who has taken it as his basis, places above the 17th dynasty the 16th, which it shews to be the first of the mortal dynasties, by giving the preceding 15 dynasties, not as dynasties of men, but as generations of the Cynic Cycle.*

* See Bryant's Observations. Myth. Vol. vi.

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The 16th dynasty, or first mortal dynasty, according to this document, lasted 190 years, which, added to the 2002, places the foundation of the monarchy by Menes or Mizraim B.C. 2192. And this epoch is confirmed within 4 years by Constantinus Manasses, who asserts that the Egyptian kingdom lasted 1663 years, which, added to the year, B.C. 525, in which Cambyses reduced the kingdom to a province of Persia, places its foundation at B.C. 2188, the date adopted by Archbishop Ussher. It also brings the foundation of the kingdom within the life of Menes, or Mizraim: and as that patriarch is said to have reigned 62 years, it allows him a life of 218 years, which is shorter than that of his cousin Arphaxad, who was of the same generation.

Having by these direct calculations (every one of which is founded upon historic record, without the slightest variation to accommodate) approximated to

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the date of the foundation of the monarchy; by reversing the process, and tracing it downwards, through the Laterculus of Eratosthenes, and the dynasties of the Theban, Thinite, and Memphite kings recorded by Manetho, and through the monumental lists, a collection of co incidences will be found, not merely con firmatory of the above, but amounting to a considerable degree of certainty.

The first king of Egypt was Menes, or Mizraim, the son of Ham; and he is found at the head of almost every catalogue.

In the Old Chronicle, the 16th dynasty, that is, the first mortal dynasty of Egypt, is stated to be a dynasty of Thinites, of 8 kings in number, reigning altogether 190 years. Corresponding to this we find the Theban dynasty of Eratosthenes, and the Thinite and Memphite dynasties of Manetho, as following:—

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Thebans.*		Thinites.†		Memphites.‡	
1. Menes	62	1. Menes	62	1. Necherophes Necherochis	28
2. Athothes	59	2. Athothis	57	2. Tosorthrus Sesorthus	29
3. Athothes	32	3. Kenkenes	31	3. Tyris	7
4. Diabies	19	4. Venephes	23	4. Mesochris	17
5. Pemphos	18	5. Usaphædus	20	5. Souphis	16
			193		97
		6. Miebidus or Niebes	26	6. Tosertasis	19
		7. Semempses or Mempses	18	7. Aches	42
		8. Bienaches	26	8. Sephuris	30
				9. Cerpheres	26
	190		263		214

I have not the slightest doubt, but that the first 5 kings in these lists were originally the same.

Menes, the planter of the nation, is the Misor of Sanchoniatho,§ and Mizraim of the scriptures, and is placed in the Theban and Thinite lists as the first king of the united realm. And, that the Necherophes of the Memphite list is the

* Anc. Frag. 84. † Ib. 94, 95.
‡ Ib. 100, 101. § Ib. 8.

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Pharao Naracho, whom Malala* affirms to be the first Egyptian king and the same as Menes, will be evident from the identity of his successor, Tosorthrus, with the Athothes or Thoth, the successor of Menes in the other list; as he is said to be the same as Asclepius, who is Thoth, to have been celebrated for his buildings, and his invention of medicine and letters.† Venephes is said to have built the pyramids; and by Eratosthenes the same is related of a king Saophis, though he evidently does not mean the Souphis in the Memphite dynasty above, but he may have misapplied the fact. I am strongly inclined to think that the pyramids were built in Egypt as early as these reigns, as buildings of that style and grandeur had been already raised upon the plains of Shinar, and many cities had been already founded even in the land of Canaan.

* Anc. Frag. 159. † Ib. 94, 95, 96, 97. 16. 4.

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I must, for the present, omit any further remarks upon the coincidences here to be observed, till I shall have referred to some of the monumental discoveries. I would here, therefore, only remark, that Eratosthenes gives but 5 instead of 8 kings, though his number, 190 years, coincides with that required by the Old Chronicle; and at the conclusion of these 190 years, he changes his titles from Theban to Theban Egyptian kings, clearly denoting that after these 5 reigns a change of dynasty occurred.

As the earliest of these sovereigns of Egypt must have rather been patriarchs or priests than kings, perhaps, with a direct succession, I suspect that the list exhibits a pedigree, and that the kingdom became divided into several petty sovereignties, constituted by the different branches of the family: and there is some ground for this in the assertion of Artapanus and Eusebius, that the coun-

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try was so divided.* In the general table of results, I have assumed the list of Eratosthenes.

After the expiration of 190 years, the conquest of the country by the Shepherds was effected. As the problem relating to the Shepherd kings is one of the most intricate and important in the whole range of the inquiry, I will endeavour first to state the difficulties, and when they are once fairly before us, so many curious coincidences present themselves, that the difficulties will be found to vanish; and all the prominent points combine themselves into one very simple hypothesis, and fall into their proper places without the necessity of rejecting or misplacing one, and without exhibiting the slightest contradiction.

All authors unite in attributing the expulsion of the Shepherd kings to the early princes of the 18th dynasty, and

* Anc. Frag. 162.

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most in placing them as the 17th dynasty.

The Shepherds are recorded by different authors as below :—

*Eusebius.**		*Josephus.*†	
Saites . . .	19	Salatis . . .	19
Bnon	40	Beon	44
Apophis . . .	14	Apachnas . .	36.7
Archles . .	30	Apophis . . .	61
		Janias . . .	50.1
		Assis	49.2
	103		259.10

Africanus.‡		*Syncellus.*§	
Saites	19	Silites . .	19
Beon	44	Bæon . . .	44
Pachnan . . .	61	Apachnas .	36
Staan	50	Aphophis . .	61
Archles . . .	49	Sethos . .	50
Aphobis . . .	61	Kertos . .	29 or 44
		Aseth . .	20
	284		259 or 274

To state the matter fairly, I have been compelled to set forth these lists at large.

* Anc. Frag. 115.
† Ib. 136.
‡ Ib. 114.
§ Ib. 140.

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And I would first observe, that all the versions of Manetho place the Shepherds as the 17th dynasty, except Africanus. Africanus puts them as the 15th dynasty; and then places as the 16th, 32 Greek Shepherd kings, but without names, who reigned 518 years; he then gives the 17th, as 43 Shepherd kings and 43 Theban Diospolites, and says that these Shepherds and Thebans reigned altogether 151 years. Again, the Old Chronicle allows four descents in 103 years to the 17th dynasty, and calls them Memphites; by which the Shepherd dynasty is evidently intended, as they held their court at Memphis: and they are so given by Eusebius, who calls them Shepherds. Again, Syncellus says that Kertos reigned 29 years according to Josephus, but according to Manetho 44; which is very singular, as he is omitted by both, and the length of his reign included in that of his successor Aseth.*

* For all the above passages, see Anc. Frag.

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The difficulties resulting from these conflicting statements among the literary fragments of Egyptian history, have heretofore been excessively increased by the monumental discoveries. The tablet of Abydos, discovered by Mr. Bankes, originally contained a catalogue of 25 reigns. The first eight have been lost by the fracture of the stone. The 9th, 10th, 11th, 12th, and 13th, are the immediate predecessors of the 18th dynasty; and the remaining 12 are fully recognized as the kings of the 18th dynasty, concluding with Ramesses II. who erected the tablet. Two of the lost reigns, viz., the 7th, Osirtesen I. and the 8th, were supplied by Lord Prudhoe and Major Felix; and the 6th, by Mr. Wilkinson, from different fragments; and the tablet of Karnak, discovered by Mr. Burton, supplies the rest :*

* This I believe was first pointed out in a plate published by Mr. Cullimore in the Transactions of the Royal Society of Literature. I am, however, utterly at a loss to conceive upon what authority

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but it must be observed, that the tablet of Karnak gives one more reign than the tablet of Abydos will admit.

Of the first 5 kings which would come upon the tablet of Abydos, the signets only are at present recognized, and not the names. Then follow 8 kings, whose names are found, as well as their signets. They are given by Mr. Wilkinson and Mr. Cullimore as below:

Mr. Wilkinson.	*Mr. Cullimore.*
6.	6. Keres?
7. Osirtesen I.	7. Osirtesen I.
8. Amun m gori I.	8. Amon muth I.
9. Amun m gori II.	9. Amon muth II.
10. Osirtesen II.	10. Osirtesen II.
11. Osirtesen III.	11. Osirtesen III.
12. Amun m gori III.	12. Amon muth III.
13.	13. Hakor?

Now, as the names of some of these kings, especially of No. 7 and No. 12,

he has preceded this tablet by another tablet of signets, which is found in the same chamber indeed, but in itself evidently disconnected. As the paper referring to the plate is not yet published, it is impossible to judge.

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appear upon monuments erected by themselves in different parts of Egypt, a difficulty is raised respecting the statement of Manetho, that the Shepherds immediately preceded the 18th dynasty, by shewing that there were native kings of Egypt, who completed buildings of costly magnificence, at the very time when the country is asserted to have been under the dominion of an enemy.

I believe I have here fairly stated every difficulty, both from the literary and monumental fragments; and I would offer the following solution, which presents itself from a comprehensive survey of all the documents before us:

—That the tablet of Abydos originally contained a complete catalogue of the native kings of Egypt, from Menes to Ramesses II.*

* The surplus signet supplied by the tablet of Karnak appears to me to present no difficulty to this hypothesis; for if the ruins of London should be hereafter ransacked, and tablets of the kings

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—That after 190 years, the Shepherds invaded the kingdom, and at first subjected both Upper and Lower Egypt to their dominion; but established themselves principally in Lower Egypt, and at Memphis, and fortified Avaris as a strong hold.

—That previously to the invasion, the kingdom had arrived at some degree of

of England from the Conquest should be found, or more than one collection of medals, they would probably differ in the number of the apparent reigns, owing to the different view in which Cromwell, Philip and Mary, and the joint reigns of William and Mary, and the sole reign of William III., and the alternating reigns of Henry VI. and Edward IV., would be regarded: and the different tablets would very probably present 34 or 35, or even 36 reigns. There was formerly a series of Papal portraits round the church of St. Paul without the walls of Rome, there is another in Florence; I strongly suspect they differ, as not one of the ancient catalogues of the Bishops of Rome, Jerusalem, or Antioch, as given by Syncellus and Nicephorus agree. It is possible, however, that the name of Menes was not originally upon the tablet; for Sanchoniatho says that the monarchy began with Thoth.

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splendour, and that the great pyramids had been erected; which is the more probable, as the great pyramidal tower at Babel was an example, which was imitated by almost every nation in the world.

—That after retaining dominion 103 years, according to the statement of the Old Chronicle, which is followed by Eusebius, the Shepherd power was broken by the natives, in the 4th year of Apophis, the fourth Shepherd king.

—That this was effected by Osirtesen I., the king of Upper Egypt.

—That after a severe struggle the Shepherds were depressed, but not actually conquered or driven out.

—That during the next 151 years, the Shepherds and Theban kings in this manner ruled conjointly, according to the statement of Africanus, or over different regions and cities of Egypt, either at peace, or in a languid state of warfare; during which the Shepherds were prin-

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cipally confined to the Delta, while the native princes, from Osirtesen I. to Hakor, retained the rest.

—That after the expiration of 151 years another dispute arose;—that the Shepherds were driven into Avaris, and beleaguered by Hakor or Alisphragmuthosis, and afterwards capitulated to his successor, Amos or Tethmosis.

—That the Shepherds retired into Philistia, and were the Anakim* and Philistines,—and that part of them passed over into Greece with Inachus; which emigration is stated by Ptolemæus Mendesius to have occurred about this time, and accounts for the confusion of Africanus in placing a dynasty of Greek Shepherd kings as the 16th dynasty.

The dynasty of the shepherd kings

* I would not derive the word ἄναξ from Anakim, yet there appears to be some connexion, as the Shepherds designated their whole nation as kings, and the Greeks always attributed to their kings the character of Shepherds. I suspect *Inachus* itself to be of the same root.

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I should thus correct, and I should synchronize the latter part of it with the successors of Osirtesen I. to the 18th dynasty.

Salatis.....	19	
Beon	44	
Apachnas Pachnas, or Archles ..	36	6. Keres?
Apophis.....	4	7. Osirtesen I.
	103	8. Amun Muthah I.
Apophis concluded ...	57	9. Amun Muthah II.
Janias, Staan, or Sethos ..	50	10. Osirtesen II.
		11. Osirtesen III.
Kertos	24	12. Amun Muthah III.
Aseth, or Assis ..	20	13. Alisphragmuthosis Hakor?
	254	

The next is the great 18th dynasty, comprising the most flourishing period of Egyptian history: and the coincidences between the monuments, Eratosthenes, and Manetho both in his history and his dynasties, are very remarkable. From a comparison of the dynasties arranged below, it will be

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evident that Eratosthenes, after the five first kings, or 16th dynasty, has continued with the 18th dynasty, omitting altogether the 17th dynasty of Shepherd Kings. Nor is he singular in this; for in the catalogue of Ramesses II., given by Mr. Burton, that king places only Menes and one other king, whose name is read as Men Moftep, previous to the 18th dynasty. The dynasty of Memphites, following the 1st Memphite dynasty, is the fourth of Manetho, said to be Memphites of a different race. It has often been pointed out, that they are the same kings with Eratosthenes' dynasty, but in a misplaced order; and I have arranged these Memphites below, not according to their original position, but according to the names of the kings, and it apparently commences with Thothmos III.

The length of the 18th dynasty, according to the Old Chronicle, is 348 years in 14 descents. They are thus given by different authors.

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*Manetho. Jos.**		*Theophilus.*†	
1. Tethmosis	25. 4	1. Amasis.	25. 4
2. Chebron	13.	2. Chebron	13.
3. Amenophis	20. 7	3. Amenophis	20. 7
4. Amesses	21. 9	4. Amesse	21. 1
	80. 8		80.
5. Mephres	12. 9	5. Mephres	12. 9
6. Mephramuthosis Misphragmuthosis ..	25.10	6. Methrammuthosis..	20.10
7. Thmosis	9. 8	7. Tuthmoses	9. 8
8. Amenophis.....	30.10	8. Damphenophis	30.10
9. Orus	36. 5	9. Orus	35. 5
10. Akenchres	12. 1	10. Their daughter	10. 3
11. Rathotis	9.	11. Athoris	12. 3
12. Achencheres	12. 5		
13. Achencheres II.....	12. 3	12. Chencheres	30. 1
14. Armais.....	4. 1		
15. Ramesses	1. 4	13. Sethos Miammu....	6. 0
		14. Armæus.....	4. 2
16. Ramesses II.	66.2	15. Sethos.....	1.
17. Amenophis	19. 6	16. Amenophis.....	19. 6
	333		272. 9

* Anc. Fr. 136, 116, 117.

† Ib. 158.

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Monuments.	*Eratosthenes.**	*Memphites.†*
Amos	6. Tœgaramachus Momchiri the Memphite.... 79	
Amenoph I. Ames		
Thothmos I.	7. Stœchus Ares 6	
Thothmos II.	8. Gosormies Etesipantus..30	
Thothmos III.	9. Mares Heliodorus .. 26	8. Thampthis...9
Amenoph II.	10. Anouphis 20	
Thothmos IV.	11. Sirius Abascantus.. 18	1. Soris 29
Regency	12. Chnubus Gneurus Chryses.. 22	7. Sebercheres..7
Rathek Amenoph III.	13. Rauosis Archicrator.. 13	5. Rhatœses...25
Amun me Anamek, the son of the son of the son of Thothmos III.	14. Biuris 10	6. Bicheris... 22
Ramesses I.	15. Saophis Comastes, or Chrematistes. 29	2. Suphis.....63
Armais		
Ramesses II.	16. Saophis, or Sensaophis..27	3. Suphis.....66
Phthamenophth	17. Moscheres Heliodotus .. 31	4. Mencheres..63
	311	264

* Ib. 84. † Ib. 102.

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In these lists there is evidently the same general outline, however differing in their details. The monuments of course exhibit the correct *number* of the kings, and from their still existing works some approximation to the *length* of each reign may be obtained. The 79 years of the Tœgaramachus of Eratosthenes comprises the 4 first reigns of Manetho, viz., 3 kings and a queen, which on the monuments appear but as 2 kings and a queen in her own right, the wife of Thothmos I. Josephus has, in 3 distinct passages,* expressed the sum of the 18th dynasty as 393 years, but when his numbers are cast up, they give but 333. From the monuments it appears that the 7th and 11th kings each reigned above 30 years. And if we give them 39 apiece, which numbers are actually found among the various readings of

* See in Anc. Frag., p. 137, a note of Mr. Cullimore, to whom I am indebted for the observation in the text.

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Eusebius and Syncellus, the sum will exactly amount to the 393 required. But though we thus obtain what Manetho, according to Josephus, wrote, it does not follow that he wrote correctly; and that he did not, is evident from the monuments, for he has inserted as kings, not only the kings themselves, but the regents also, who held sway during part of their respective reigns, and who have no place in the monumental lists of kings, though they appear as regents. By deducting, then, from the 393 years above, the 38 years of Chebron, Akenchres, and Achencheres, we obtain the length of the dynasty as 355 years, differing but 7 from the 348 given by the Old Chronicle. And as Manetho distinctly states that the Shepherds did not capitulate till after the commencement of the reign of Amos or Tethmosis, I presume they capitulated in the 7th year of his reign, thus leaving the 348 years given by the Old Chronicle as the exact length of the

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dynasty, to be distributed exactly among 14 reigns, as stated by the Chronicle, and evident upon the monuments.

Before we proceed with the coincidences of the 18th dynasty, it is necessary to speak of the persons who are recorded to have introduced among the Egyptians, letters and the arts, the reformation of their religion, and the regulation of their calendar, and also of the manner in which they regulated their time.

It was common among all the heathen nations to regard the founders of their respective nations, and indeed every very extraordinary person who appeared among them, as Avatars or Incarnations of some deity. Now it is related by several historians, that two very remarkable personages appeared in Egypt, both of high antiquity, but at a considerable interval from one another, known by the name of

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Thoth or Hermes, who were looked upon as Avatars of that deity; and from some accounts it might be inferred that there were three. The first of these may be identified with the 2nd king of Egypt, Athothes, the grandson of Kronus, or Ham. According to Sanchoniatho, he was the adviser of Kronus, who gave him the land of Egypt. He was the inventor of letters and the arts.* The other, the second Hermes, was likewise said to be the inventor of letters and the arts, a sacred scribe, and author of the ancient Hermetic books,† an adept in mysterious knowledge, and an interpreter of the will of the gods.‡ He was, moreover, a great prophet, and to him they ascribed

* Sanchoniatho, Anc. Frag. 4. 9. 11. 15, 16. Cedrenus says he succeeded Mizraim. See the authorities collected in Bryant's Mythol. vi. 329.

† Jamb. § 8. c. 1.—Anc. Frag. 89.

‡ See Bryant, vi. 329.—Clemens Strom. 23.—Diod. Sic. i. vi. c. 4.—Plato Phæd.—Plut. Is. et Os.—Symp. 3.

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the reformation of the Egyptian year.* He was regarded also as the Hermes *pedisequus*, a kind of lacquey or minister. By Cedrenus,† who, with many other embellishments, refers to the same person, it is further stated, that he was envied by his brethren, who were 70 in number, and finding that they were continually consulting how to destroy him, he went into Egypt, to the tribe of Ham, where he was received with great honour, and lived in splendour, and was afterwards worshipped by them under the name of Hermes, expressly because he was a prophet, and supplied them with riches: wherefore they denominated him the Giver of riches, and looked upon him as the god of wealth.‡ It is further asserted that he was called *Trismegistus*, because he communicated to the Egyp-

* Strab. xvii.—Plut. Is. et Os.

† Hist. pp. 17, 18.

‡ Cedr. p. 23, and Cyril. cit. Cedr. Ib.

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tians, that there were three divine powers in the unity of the deity.* Cedrenus moreover places him in the reign of that Sesostris,† from whose immediate successor, he says, the line of the Pharaohs descended.

It is concluded by Bryant, and almost every antiquarian, that this second Thoth or Hermes was Joseph: and of this I think there can scarcely exist a reasonable doubt.

Joseph was also connected with the regulation of the calendar. The manner in which the Egyptians regulated their time was this. By reckoning the year at only 365 days, and omitting the quarter day, they lost a day in every four years; and consequently the first day of their year would, in the course of four times 365 or 1460 true years, recede through every day of the year, and return to the point from whence it had set out. This period of 1460 true years, or

* Cedr. Ib. † See also Ælian. Hist. xii. c. 4.

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1461 of their vague years, was the great Sothic cycle of the Egyptians. The first month, as well as the first day of it, was called by the name of Thoth or Hermes. The Thoth originally started from the Heliacal rising of the Dog-star, which occurred in Egypt about the first day of August, and after the revolution of the cycle, it returns to the same point again, when a new cycle commences.* At the commencement of each cycle the PHŒNIX is said to return, and then the old Phœnix is stated to expire, and a young one to spring out of its ashes. The return of the Phœnix, and the return of the Thoth or Hermes, are terms synonymous. And the names of Phœnix and Thoth, of which Hermes is but the Greek

* I can find nothing to lead to the supposition that they took into account the precession of the Equinoxes. The precession would lengthen the cycle to 1504 years. We find, however, no mention of such a cycle, but constantly of that of 1461 years.

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translation, have a very intimate connexion with one another. The return of the Phœnix is by the majority of ancient authors stated vaguely at 500 or 1000 years; but it is correctly specified by Tacitus at 1461 vague years, equivalent to 1460 Julian years. Tacitus in the same passage relates, that in the reign of the third Ptolemy of the Macedonian kings, the Phœnix returned to Egypt; or, in other words, that in the reign of Ptolemy Euergetes, an old cycle had expired.* Now the 25 years of the reign of Ptolemy Euergetes extend from B.C. 246 to 221. The commencement therefore of the cycle which expired in

* It is evident that he means the reign of Euergetes, the 3d Ptolemy, and not that of his predecessor, Philadelphus, who might be reckoned the third of the Macedonian kings, including Alexander; because he goes on to remark that the interval between the reign of this Ptolemy and that of Tiberius, was less than 250 years: the interval was in fact 235, and the interval between the reign of Philadelphus and Tiberius was not less than 260 years.—See Tac. Ann. vj.

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his reign, must have happened between the years 1706, the year of the descent of Israel into Egypt, and 1671, which were both within the administration of Joseph. It is asserted by Plutarch,* that Hermes added the five additional days to the Egyptian calendar. By Censorinus† this is said to have been effected by Arminus, which is in fact Hermes: and Syncellus,‡ from some author, shews that the regulation occurred about the same time, by asserting that the addition of the five days took place in the reign of Aseth, the 7th of the Shepherd kings. But Strabo§ says, that the improvement by Hermes was the addition of the quarter of a day: at all events it is manifest that the regulation took place in the administration of Joseph, and that, as he was considered as a Hermes, he must have been the Hermes who effected it.

* Is. et Os. † C. 19.
‡ See Anc. Frag. 141. § Lib. xvii.

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The name given to Joseph by the king of Egypt was according to the Masoretic points Zaphnath Paaneah: but without the points, which have only disguised it, it was ZPhNTh PhŒNCh,* and the latter word is in all the Greek translations rendered Phanechos. From all these circumstances I have no hesitation in identifying Joseph with that Hermes, who started that cycle which expired in the reign of Ptolemy Euergetes. Thoth and Phœnich I conceive to be the original Egyptian names, and Hermes is but a Greek translation; Thoth is constantly occurring upon the monuments; but Phœnich seems to be more especially applicable to this particular incarnation of Thoth as Joseph, for Phœnich is the very name which was first applied to him by Pharaoh.

I would now draw attention to a very

* צפנת פענח. The Septuagint gives it as Ψονθομ φάνηχος or Ψονθον φάνηχος, and Josephus as Ψοθομφάνηχος.

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singular hieroglyphical discovery. Mr. Burton, to whose indefatigable researches in Egypt we are so deeply indebted, has collected and published in the 37th plate of his *Excerpta hieroglyphica* a variety of records, relating to a very remarkable figure of one of the Egyptian demigods, with a beak and very peculiar square ears. Mr. Burton was the original discoverer of this, and with his permission I have copied it in the plates annexed. The head seems to be equally applied to a beast as in fig. A, and to a bird as in fig. B. The personage represented by this hieroglyphic, as in figs. D, L and M, I conceive for the following reasons to be an Avatar or incarnation of Thoth or Hermes. The Hermes, who corrected the calendar, is called *the Dog* by Plutarch;* and of this perhaps fig. A is a representation: but the more ordinary figure of Hermes was either a Hawk-headed, or

* Is. et Os.

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Ibis-headed figure, and in figs. B, C, D, L and M, the head of the bird is more predominant. In fig. D this personage is holding in his right hand the palm-branch, a special and peculiar emblem of Hermes,* upon which he is always represented as measuring off *time*, such as the length of the reigns of the kings. Mr. Wilkinson has also given another figure of this personage with two heads, his own square-eared head combined with that of a hawk, the head of the first Hermes. The figure occurs as a hieroglyphic character in several ovals containing the names of kings; and if we substitute for it, in the ovals E and G, which are those of the father of Ramesses the Great, the sound of Herm or Arm, we obtain the name of Amun me Hermeen, and Phthah me Armeen for the very king,

* The palm itself in Greek bears the name of Phœnix: and in the ancient Coptic, the same word *Beni* is used both for the Palm tree and for the Stork or Ibis.

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whom Manetho has designated as Armais and Josephus as Hermæus: and though we have long known this to be the same king, we have never yet been able to identify his name in sound. This however I take to be nothing more than a Greek version of the name of that king, and of this some more curious confirmation will presently appear. The name of this figure itself is commonly erased upon the monuments. It occurs however in fig. D just above the palm branch, and appears to me to read as *Thoth twice great*, or something to that effect, though the first character of the name is not yet ascertained. The figures B and C, which I have also copied from Mr. Burton's plate, appear to me to contain the very sirname of Joseph: I would not however lay much stress upon this circumstance, as Mr. Burton has not been able to inform me whence they were obtained, but he believes from the tombs of Biban el Moluk. The first part of fig. C I should

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read PheNaH ZAPhNA, and in fig. B, assuming the bird as the Phœnix, I should read Phœnich ZaThNHS.

In the 9th* year of his admininistration Joseph, by the sale of corn to the starving population, collected into the royal treasury all the gold, and silver, and valuables, of all the land of Egypt and Canaan, and the surrounding countries; and in the 10th he obtained all the cattle. In the 11th year he acquired all the land, and after the expiration of the famine, granted it out again to the inhabitants, reserving for the royal revenue one fifth of the entire produce of the soil, except the portion of the priests; thus rendering the king not only the ruler, but the landlord of the whole realm; producing a revenue, comparatively exceeding that enjoyed by any sovereign prince from that time to the present.† He then re-

* Gen. xlvii.

† In speaking of some of the Egyptian monuments, Pliny has remarked that they were erected by kings, who must have had more wealth than they knew how to dispose of.

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moved all the people from the country into cities, from one end of the border of Egypt even to the other end thereof.*

The consolidation of the kingdom thus effected—the immense wealth and power thus acquired—and the removal of the people universally into cities—and their continued subsistence out of the royal munificence for three or four years more, during which their labour must have been rendered available for the construction of these cities, point out the reign in which these things occurred as the commencement of Egyptian greatness, and particularly of architectural magnificence; and that reign must have been in the beginning of the 18th dynasty: and upon that line of kings, while the children of Israel grew into a people under their protection, the blessing of God seems to have been poured abundantly.

* Genesis, xlvii. 21.

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It can hardly be supposed that Joseph when he obtained such power in Egypt, neglected the religion of the country. Accordingly we find in Eusebius, upon the authority of Manetho, that the Amosis who expelled the Shepherds, put a stop to the human sacrifices which had hitherto prevailed in Lower Egypt. I have no doubt but that it occurred about this time; but I think that Joseph could hardly have ruled over Egypt till the beginning of Amenoph I. We are, however, assured by Clemens, Proclus, Jamblichus, Plutarch, Ælian, Porphyry, aad several other authors, that the second Hermes wrote the sacred books, which were preserved by the priests with the greatest care: and from the scraps of them, and traditions relating to them that have come down to us, it is clear that the religion inculcated by the second Hermes was not idolatry. We may observe, also, that the Egyptians held the Trinity, and in the form of the Saiva

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sect, which is a nearer approximation to the truth than the Vaishnava doctrine:* and they also distinguished the persons of it by Hebrew names.† I am consequently inclined to lay some stress upon the tradition preserved by Cyril and Cedrenus, that Hermes instructed the Egyptians in the knowledge that in the Unity of the Godhead were three divine Powers; especially as those authors have no conception that that Hermes might be Joseph. I should conceive, therefore, that his reformation was, during his administration, an entire abolition of idolatry; and though idols may be found upon the monuments of the Pharaohs contemporary with him, that would scarcely invalidate the inference, as they may have been introduced subsequently to his decease, when he himself became regarded as an Avatar of Thoth; and that this constantly occurred in ancient

* See Mythol. Inquiry, 55. † Ib. 80.

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as well as modern times, is manifest from the circumstance that upon the great obelisk at Karnak, the figures of Amun Ra are evidently the work of an age, at least a century after its erection.

It is manifest from the many sculptures at Thebes, of which the figures in the plates are some, that Thothmos III. came to the throne very young, and was brought up under the instructions of the personage represented in the figure, whom I take to be Joseph, or Hermes Phœnix. In fig. D this Hermes is standing simply with his left hand extended, and holding in his right the palm branch, the common symbol of Hermes. In fig. L he is standing behind Thothmos III., (whose name and signet appear above him) with his left hand upon the arm, and his right resting upon the shoulder of that king, apparently instructing him to shoot with the bow. In fig. M he is standing hand in hand with the same king, pouring with his left hand some-

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thing into a cup which the king is holding in his right.* He is found in constant connexion with Thothmos III., and was evidently, at one time at least, in high honor with him; but wherever this figure occurs, it is commonly defaced by some attempt to obliterate it or its name, which would indicate, that in succeeding times he was not held in the same repute as he was originally; and this would naturally take place, when the benefits, which that patriarch had heaped upon the nation, were forgotten among the troubles that attended the Exodus of his kinsmen.

Upon the whole, I conclude that Joseph began his administration not very long after the expulsion of the Shepherd kings, and ended it a few years after the

* Mr. Burton informs me that the figs. L and M are from Karnak, and the fig. D from Medinet Haboo. Besides the figure given by Mr. Wilkinson, there is a similar one upon a tablet belonging to Mr. Hayes.

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commencement of the reign of Thothmos III., the fifth king of that dynasty; and that he was minister of Amenoph I., Thothmos I., Thothmos II., and for a very few years in the reign of Thothmos III.; and that he not only consolidated the kingdom, but that from his administration must be dated the rise of the grandeur of the 18th dynasty, and the reformation of the religion and calendar of Egypt: and all these coincidences concur to place him in the exact position, which, by a simple enumeration of the numbers of Manetho, we had before determined.

There is another very singular personage, whose appearance among the princes of the 18th dynasty has produced great confusion. His name and signet I have given, figs. H and I. He is not in any of the lists of kings, yet he bears a royal title, and is so strangely mixed up with Thothmos I. and II., that some of the Egyptian discoverers have sup-

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posed him to be the same with Thothmos I. This is disproved, because he is found to have survived that king. Mr. Wilkinson supposes him to be posterior to Thothmos I., and antecedent, at least, to Thothmos III., and probably to be a queen, and calls him Amun Neitgori. The grounds on which he supposes him to be a queen, appear to me insufficient, nor were they acquiesced in by M. Champollion, who calls him Amenenthe, and considers him to be the husband of the daughter of Thothmos I., and regent during the minority of Thothmos III., and that he was high in honor with Thothmos I. and II., and at first with Thothmos III.; but that as soon as Thothmos III. received the sole government, he looked upon this personage as a usurper, and every where effaced his name and substituted his own instead. Mr. Cullimore, in the plate before mentioned, places him as a monarch reigning contemporary with Thothmos I. II. and

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III. In the original lines of the great obelisk at Karnak are the signets both of this personage and Thothmos I.; and several temples appear to have been erected by him jointly with Thothmos I. and II. He falls exactly into the position occupied by Joseph, both in respect to time, and in the circumstance of his being as it were a joint ruler during so long a period as the reigns of 3 or 4 successive kings. And I take him to be the *Chebron*, or *Chebros*, given by Manetho as the 2nd name of the 18th dynasty: and in that name, which is omitted upon the monuments as a regent, I fancy we may distinguish *The Hebrew*,* as Joseph is expressly called no less than four times in the relation of the story of his rise to power.

* The initial letter in the Hebrew is guttural. The Greeks have not the letter, but used for it sometimes the X, and sometimes the Aspirate. Josephus thus writes Χεβρῶν for the city Hebron, and Ἔβερος for Heber.

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Joseph was made by Pharaoh 'ruler over all the land of Egypt, and according to his word were all the people ruled, and in the throne only did Pharaoh reserve distinction to himself.' Pharaoh likewise took his ring or signet from his hand, and put it upon Joseph's hand. The monumental personage in question uses a royal signet, which is, in fact, only such a variation of that of Amenoph I. and Thothmos I., as succeeding kings adopted from their predecessors: and the signet which Joseph used, was, I have no doubt, the royal signet, which Pharaoh gave him, and authorized him to use.

The great difficulty has been to determine whether this Regent is a male or female. In the lateral lines of the great obelisk at Karnak, he is represented always in male attire, commonly as bearded, and with the crown of Lower Egypt only. To his name, however, or perhaps, we might rather say, to his insignia or

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bearings, is attached the semicircle, which commonly, but not universally, indicates the female sex. I take it here to be simply a kind of heraldic difference, indicating that the bearer was, as it were, *king consort*, or that *all but king* that Joseph was. It is however clear, that, in the legends respecting him upon other buildings, feminine nouns and verbs are used, which M. Champollion explains by supposing him to be the husband of a queen in her own right, receiving the addresses, and speaking solely as the representative of his wife. The name, which M. Champollion reads Amenenthe, is simply, without its intermediate vowels, (which are gratuitously inserted) AMNNTH, which differs from the name of the wife of Joseph, ASNTh, or according to the Greek version Asenethe, in no important particular except in the substitution of the S for the M, two letters in the ancient Hebrew alphabet so much alike, that they are not distinguishable from one

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another; and I presume that in process of time the S has been substituted in the Hebrew for the M. This lady, chosen by Pharaoh for the wife of Joseph, was the daughter of Poti-Phra, the priest of On, at that time the royal city. And from the near connexion in those early times of the kingly and priestly offices—from the names of her father, a compound of two royal titles Peté and Phra—from the honors designed to Joseph—and from the circumstance of Amenoph I. leaving no sons to succeed him, I conclude that the lady was not only closely connected with the royal family, but was actually or eventually one of the co-heiresses presumptive of the throne, perhaps a sister or a cousin of the lady in whose right Thothmos I. obtained it. And this may explain the circumstance, why the daughter of a priest, probably an idolater, was chosen as a fitting wife for Joseph. And this hypothesis seems to me to derive some confirmation from the substitu-

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tion in one of the signets of the obelisk of Karnak of the name of Amun Hermeen,* the name of Joseph as composed of the square-eared hieroglyphic, for the usual name of Amnnth. Connected with the higher destinies of his nation, Joseph would of course decline the sovereignty for his descendants, but the crown of Lower Egypt, which this regent wears, seems to intimate, that his wife retained, at least, the viceroyalty of that part of the kingdom during her life: and there are some statues extant, bearing the name and signet of this regent, representing a personage with a beardless face and feminine appearance, which savour strongly of idolatry. But these seem to me rather to be dedications made to her by her kinsmen in Upper Egypt, than representations of her, erected or authorized by herself, or by

* It is not Amun Me Hermeen, the name of Armais the father of Ramesses II.

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her husband, whose power, in the latter part of his administration, does not seem to have extended over Upper Egypt.* One of these statues belonging to M. Athanasi, is a very fine and valuable antique, of black granite, in appearance a female, but in the sitting posture, which

* I am not aware that any traces of idolatry are really to be found upon the contemporary monuments from the middle of the reign of Amenoph I. to that of Thothmos III. except such as may have been inscribed by that monarch, who took such liberties with the monuments of his predecessors: thus in the instance of the great obelisk at Karnak, erected by Thothmos I. the lateral lines have manifestly been inscribed by Thothmos III.; and it might have been the policy of a king attempting to revive idolatry, to represent his predecessors engaged in those very acts in which he represented himself. I can regard none of these as conclusive, for if, in the ruins of modern Rome, should be hereafter found the alto relievo of Algardi, representing Pope Leo the Great with the apostles St. Peter and St. Paul arresting the progress of Attila, some future antiquarian might be deceived into the opinion, that that costly work had been erected by Leo, and that he had countenanced the legend.

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I believe is common only to men. Unfortunately, the chief signet of the piece is erased, by which we are disabled from ascertaining accurately by whom it was erected.

Having made these observations upon the minister, some observation upon the king himself, who is said to have introduced literature and the arts, will still further tend to confirm the argument. The king, who is said to have instructed the Egyptians in the arts and sciences, to have constructed many of the greatest works in Egypt, and to have dug the celebrated lake Mœris, is called by Herodotus, Diodorus, and several others, Mœris or Myris. He is placed by Diodorus 7 generations above Sesoosis or Sesostris, the Ramesses the Great of the monuments; and in this position he would coincide with Thothmos III., who is recognized by M. Champollion as

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Mœris.* Herodotus also places Mœris above Sesostris; but in another place he states that Mœris lived about 900 years before his own time: but in this he seems to have confounded together two different persons, as will presently appear. Mœris was in fact a common name, and seems to have been more particularly applied to those kings, from whom the cycles started. If we turn to the catalogue of Eratosthenes, we find several kings under the name of Mares or Mœris: and the first of these, the 9th king, is very nearly in the same position above Saophis (whom I shall presently show to be Sesostris), as Myris

* It does not appear upon what authority M. Champollion always calls Thothmos III. Thothmosis Mœris; and Mr. Wilkinson makes the same complaint. Perhaps it rests upon the following passage of Herodotus, who states, that the temple of Memphis was built by Menes, Mœris, and Sesostris, whereas by the monuments it would appear that Menes, Thothmos III. and Ramesses II. were the chief builders.

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is placed by Diodorus above the same king.

I believe that the Mœris of the Greeks, Herodotus, Eratosthenes, and Diodorus, may be identified both with Thothmos I., whose name according to Manetho is Mephres or Mesphres, the Stœchus Ares of Eratosthenes, and with Thothmos III., the Mares of Eratosthenes: and the Greeks have taken the name, not from the nomen, but from the scarabæus which appears in the prænomens of both those kings. The Ares of the Greeks, or Mars of the Romans, was a form of the Egyptian Horus or Phthah; and from the constant occurrence of the word Ares and Cheres in all the Greek versions of the Egyptian dynasties, there is good reason to suppose that the Greeks have commonly substituted it for some form of the Egyptian Phthah: and from the following coincidences it will be clear, that the word Ares or Cheres was a substitute for Phthah Thore, who is com-

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monly represented with a scarabæus on his head*; for wherever the Greeks met with this name Thore they seem to have substituted for it Ares or Cheres†: thus the name of the Assyrian king Thourus or Thouras, the grandson of Ninus, is said by Cedrenus and the Paschal Chronicle to have been changed by his father into Ares or Arius, but Suidas says 'into Baal, which in their language is Ares:' and again in Homer we have constantly Θοῦρος Ἄρης connected for Mars, and in Suidas Theusares.‡ This name of Ares is in fact but a substitute for the scarabæus, the emblem of Phthah Thore.

* Mythological Inquiry. 43. 101.

† Manetho's 5th dynasty, viz. of Elephantine kings, I conceive to be a version of the 18th, taken from the signets: almost all the names are compounds of Cheres, and almost all the signets have the scarabæus.

‡ There seems also to be some connexion between the Thore and Thoor, the Alexandrian name of Thoth; indeed Thoth was considered an Avatar of Phthah Thore. See vj Bryant, 204, and Sanchoniatho, Anc. Frag. 9, 10, 11.

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The prænomen of Thothmos III. appears in fig. L, and if the preceding supposition be well founded, it will read Phra Me Ares or Pharaoh Mares. From all these circumstances I without hesitation identify Thothmos III. with the first Mares of Eratosthenes and the Mœris of the Greeks, and Thothmos I. with the Stœchus Ares of Eratosthenes.

Though Joseph began his administration in the reign of Amenoph I., he could only in that reign have laid the foundation of the mighty monarchy, which arose from his exertions; and the works and embellishments and arts, which gave the empire its lustre, could hardly have begun to show themselves till the succeeding reign: and I submit that this is the interpretation of the opinion which attributes to Mœris the invention of the arts and sciences. Again, as the kings of Egypt recommenced their rule over the entire realm as Pharaohs with Amos, I

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would suggest that his successor Amenoph I. must have been the king whom Cedrenus mentions as the Sesostris* in whose reign Hermes reappeared, and from whose successor the line of Pharaohs sprung, for indeed Thothmos I. held the throne only in right of his wife, and commenced that line of Pharaohs.

From a curious plate, which is given by Rosellini, from monuments at Thebes of about the age of Thothmos III., it might almost be concluded that though Thothmos III. had himself known Joseph, and deified him after his death, yet, that before the expiration of his reign, his sentiments had so far changed, that he had not only erased his name from the monuments, regarding him as little better than a usurper, but that he himself began, at the conclusion of his reign, to treat the Israelites with seve-

* Dicæarchus places a Sesostris as the first mortal king of Egypt. Anc. Frag. 101.

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rity. The plate of Rosellini is that of a people of a Jewish appearance making bricks, and building under the superintendance of Egyptian taskmasters. The plate is not from one of the royal monuments, but from a tomb of some superintendant of the architectural works, who, though he might have been appointed to his office under Thothmos III., might have continued in his office during the whole of the succeeding reign. The Israelites, however, were always occupied in Lower Egypt; and as they were so confined to a single spot, the land of Goshen, that during the plagues they were completely separate, and departed together in a body, they could hardly have been employed in Thebes or Upper Egypt: I should therefore conceive, that the people here represented must have been captives, the remnant of the shepherds, whose main body had capitulated and departed, or perhaps some captives

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from Ishmael, Esau, Moab, or other neighbouring nations, the descendants of Abraham.

Every person, at all acquainted with the monuments of Egypt, is aware of the magnificent structures, as well as the capricious disposition of Thothmos III., which appears so manifestly upon his works. He evidently came to the throne young, and Joseph apparently retained the government some few years after his accession, but died long before the conclusion of his reign. Thothmos III. turned his chief attention to architecture and the arts, and appears very freely to have disbursed upon his favorite art the treasures acquired under the administration of Joseph. In the course of things also he must have completed, and perhaps inscribed with his own name and signet, several of the buildings which Thothmos I. and II. had begun; as the inscription upon St. Peter's gives to Alexander VII. the glory of having

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erected it. And it is indeed a complaint against this king, that he constantly appropriated to himself the works, which preceding kings had erected, by the erasure of their names, and by the inscription of his own. And to me it appears that this further complaint may be alleged, that if Joseph did ever succeed in eradicating idolatry, Thothmos III. was the first who relapsed into it again. This relapse appears to have been a gradual return. Upon his monuments I am not aware that we find any of the gross representations, and variety of gods, which appear to multiply in each succeeding reign. Amun, however, which I take to have been originally a name for the true God (like the Allah* of the Mahomedans), is delineated in the human form, and this and Ra, the Sun, as his representative, are

* Allah is but a slight variation of the word used throughout the book of Job.

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almost all that are to be found upon his monuments. But he evidently attributed divine honors to Joseph, as the second Hermes: and it is only the rapid descent of such a capricious king as this that can account for divine honors having been paid to him at all; because within fifty years after Joseph's death, his kinsmen were oppressed and reduced to slavery: and after that event no king of Egypt would have cared to rank a patriarch of the degraded race among the gods he worshipped.

The successor of Thothmos III. was Amenoph II., the Anouphis of Eratosthenes.

Thothmos IV., the Orus of Manetho, is the Sirius of Eratosthenes, a name easily substituted by Eratosthenes, a Greek astronomer, for Thoth. He is the Soris of the Memphites. If I am right in placing the death of Joseph early in the reign of Thothmos III., the direct servitude and persecution of

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the Israelites, and the birth of Moses, must have occurred about the commencement of this reign, or in the preceding; and in the court of this king Moses must have been brought up.

The next sovereign, according to Eratosthenes, is Chnubus Gneurus, or Kneph Chen-Ares as I would resolve it; who appears to be the Chen-Cheres, the queen mother and regent during the minority of the two brothers that succeeded Thothmos IV.; in which character she appears, but not in the list of kings.

The next king is given by Erastothenes as Rauosis, the Rhatœses of the Memphites, and the Rathotis or Amenoph III. of Manetho, whose signet reads as Rathek. His brother is called by Mr. Wilkinson Amun Toohn, which is the legitimate reading of his signet, fig. K, and is still preserved as a local name upon the spot where it is found, which is to this day called Gebel Toona, or

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the *mountain of Toohn*. Mr. Wilkinson suspects that he is the Danaus* of the Greeks; and it appears to me that that conjecture is perfectly correct. Several buildings were commenced in Egypt by the two brothers. According to history, Danaus was expelled: Mr. Wilkinson supposes him to have died; at all events he ceased to reign, and his brother Amenoph attempted to obliterate every recollection of him by erasing his name from the monuments, and, as Mr. Wilkinson observes, by his influence with the priests prevented his name from being enrolled among the kings.

As the reign of Thothmos IV. extended to nearly 37 years, Moses must have been nearly 40 years of age at the beginning of the reign of Amenoph III.

* There is no distinction yet ascertained in the hieroglyphics between the D and T. Indeed the Greek Δ was always pronounced, not as a D, but as a soft Th, and is to this day by the modern Greeks.

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It is hardly possible that a person occupying a position so singular as Moses did, could have escaped jealousy, or have maintained himself in favor upon the accession of a new king. He was one of a race oppressed and feared by the Egyptians, and had spent his early life in favor with the preceding king upon an equality with the princes of the blood, and had been a man "mighty both in words and deeds,"* and, according to the relation of Artapanus† and Josephus, had conducted a war against the Ethiopians. Upon the accession of a new king we find the envy, with which he had been regarded, broke out, and the officers of Pharaoh sought his life.‡ At the age of 40, therefore, he showed himself to his brethren, and upon the slaughter of the Egyptian, (who is represented by Artapanus, ap-

* Acts, vii. 22. † Anc. Frag. 119.
‡ Exod. iv. 19.

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parently without much foundation, as one of these officers, who had conspired to waylay him,) he fled into Midian, where he continued nearly 40 years longer. "And it came to pass in process of time," or literally, after many days, "that the king of Egypt died."* Moses is informed of this circumstance, and also, that "all those men were dead which sought his life."† And these facts will, I think, amply confirm the position, that the first 80 years of the life of Moses were nearly divided by the reigns of the two kings, who ruled in Egypt during nearly the whole of that long period.

We now come to a problem as intricate as that of the Shepherd kings, and which I would treat in the same way, by first stating the difficulties and such other circumstances as throw light upon

* Exod. ii. 23. † Ib. iv. 19.

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the subject, and then drawing my conclusions.

According to Manetho, "the king, who brought upon his country the calamities of the Exodus, was an Amenophis, who had a desire to be a beholder of the Gods.* And to accomplish this he is persuaded by a priest to free the country of the lepers, who are manifestly the Israelites. Upon this he collected them together and sent them to work in the quarries, but afterwards permitted them to take up their habitation in Avaris; but when the Israelites under the conduct of Osarsiph, who was afterwards called Moyses, had taken possession of this place, they revolted and called in the Shepherds, who after their expulsion had

* If the passage could imply (which perhaps the original did, though the Greek will not) that he was desirous of giving visible representations to the gods, or of furthering that idolatry, which had gained a footing, it would afford some satisfactory ground for the preliminary expulsion of the Israelites and those who thought with them.

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taken up their abode in Judea. At this combination Amenophis was so alarmed, that he collected the sacred animals, buried the idols, and fled into Ethiopia. The Shepherds and Israelites combined, are then stated to have committed the greatest enormities, particularly directing their efforts to the destruction of the idols and the sacred animals. After *thirteen* years Amenophis and his son Rampses returned and drove out the allies."

Chæremon differs from this account only by stating—"that the king Amenophis was incited to the act by a vision from Isis, who rebuked him on account of the desolation of her temple; and he further informs us, that the lepers departed under the command of two leaders, Moses, whose Egyptian name was Tisithen, and Joseph, whose Egyptian name was Peteseph. But when they arrived at Pelusium they met a body of 380,000 men, *left there* by Ame-

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nophis, whom he would not suffer to come into Egpyt. With these they formed an alliance and returned: Amenophis fled into Ethiopia, and the allies were ultimately driven out by his son Messenes."

Diodorus states only—"that a concourse of foreigners who were addicted to strange rites and worship were driven out. One part of them under Moses settled in Judea; but the most illustrious passed over to Greece in a body under Danaus, and Cadmus." Lysimachus relates a similar story, but says that the king's name was Bocchoris.* Tacitus relates a similar tale, and also states that the name of the king, who drove them out, was Boccharis.

Now if we turn to the dynasties the successor of this Amenophis III. in the Memphite list is called Bicheres; in Eratosthenes Biuris; in Africanus Chebres; in Artapanus Kenephres; in

* For all these passages, see Anc. Frag.

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Eusebius either Acherres or Chencherres; and Eusebius moreover states that Moses went out of Egypt in his reign. On the monuments his name reads Amun me Anamek. He made some additions to the buildings of Egypt, but Mr. Wilkinson says his reign was short; by Eratosthenes it is given as 10 years; by Manetho as 12: by others 16, 18, and 26 are also allotted. From his works I should be inclined to allot him 12 during his father's retirement in Ethiopia, and 1 after the return of Moses, making altogether the *thirteen* mentioned by Manetho as the duration of the troubles.

There is no indication whatever that the Amenoph, who brought all these troubles upon his country, was the king who was actually drowned in the Red Sea; but the king who perished must have been his son Bocchoris, whom all accounts represent as having driven out the Israelites.

Not long after the passage of the Red

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Sea, Moses sent away the *mixed multitude*, because they tended to seduce the Israelites. These people could have left Egypt in company with the Jews, and through the dangers of the Red Sea, upon no ordinary motive; and if we recur to the hieroglyphics we shall find some curious circumstances, which connect the representations of the monuments with the literary fragments.

The cause of the dissentions* between the two brothers Amenoph and Amun

* I am inclined to fancy that some connexion exists between these events in the Egyptian Thebes and the Theban war of the Greek mythologists. In both accounts we have the two royal brothers, respectively at the head of the Theban and Argive party, at war, in which the Argive brother is worsted in his attempt to recover his share of the kingdom. The Sphinx also, which was erected by their father, Thothmos IV., is introduced in the Greek fiction, and consulted by Laius as oracular: in each there is the exposure and rescue of an infant destined to subvert the empire; whilst the double regency of Creon, both before and after the reign of Eteocles, seems to be paralleled by that of Achencheres both before and after Amenoph.

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Toohn or Danaus appears to have been a religious difference. Amenoph was a gross idolater, which appears not only from his monuments, but from the foregoing literary fragments, in which he is represented as acting on religious motives, and in his flight providing for the safety of the idols and sacred animals: but his brother was evidently the reverse; for at Alabastron, and Gebel Toona, and wherever this king is met with, he is placed under these singular circumstances, that he appears to be paying his adoration to the Sun alone, and never to any of the idols of Egypt.

The conclusions from the whole that I draw are,

—That the dissentions between the brothers was a religious difference, Amenoph being a gross idolater, and Danaus the reverse.

—That in the struggle Amenoph prevailed, and Danaus was compelled to flee, but maintained himself at Pelu-

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sium; that he was upon friendly terms with the Israelites and sought their assistance, but that both his party and the Israelites were equally oppressed by Amenoph.

—That 13 years before the Exodus Danaus made an attempt to recover the kingdom, perhaps in alliance with the Anakim or Philistines, the remnant of the Shepherds, and favoured by the Israelites, whom he might have induced to join him. Upon this Amenoph appears to have associated his son Chencheres or Bocchoris with him in the kingdom, and retired to Ethiopia. The attempt seems to have failed, and Danaus to have retired again to Pelusium, and the Israelites were more severely tasked.

—That in the 12th year of Bocchoris Amenoph died, and Moses returned to Egypt.

—That Danaus and his party took advantage of the Exodus, and departed with the Israelites, and that they com-

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posed that mixed multitude, which separated in the desert and made their way to Greece.

—That if they were not actually true believers, yet that they left Egypt with a purer faith, and with an abhorrence of the idolatry which then prevailed in Egypt: that they were in fact the remnant of the native and foreign believers, who had accepted the religion of Joseph.* Nor was the connexion between the Jews and Greeks forgotten in after ages; for the Lacedemonians in the embassy to Judas Maccabæus claimed kindred with that people. Danaus and his followers appear to have taken from Horeb that mixture of Mosaic rites and worship, which was afterwards combined with the idolatry into which they fell, and

* That there were such in Egypt, is evident from Exod. ix. 20., where, in the plague of the hail, "He that feared the word of the Lord among the servants of Pharaoh, made his servants and his cattle flee into the houses."

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which combination was so remarkable among the Greeks.*

In further confirmation of this we find in Eratosthenes, after Bjuris, a change from Theban Egyptian to Theban kings, clearly denoting a change of dynasty: and the position here assigned for the emigration of Danaus agrees exactly with the date given by the Parian Chronicle.

Connected with this supposition is a very singular passage in the catalogue of Syncellus. Having collected so many curious chronological passages from ancient writers, that father has worked them into a chronological system of his own, and has given a canon as his own approximation to the truth. But he has unfortunately adopted the most lengthened system of chronology, and placed the creation B.C. 5500, thus rendering it imperative upon himself to find the names

* See Myth. Inq. p. 102, 106.

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of kings of Egypt during a period of above 1,000 years beyond the truth. And to accomplish this he has placed before the Shepherds 25 kings, the last of whom he calls Koncharis, and gives him 5 years; and then he says,—"That in the 5th year of Koncharis, the 25th king of Egypt, in the 16th dynasty of the cycle, which is called by Manetho the Cynic cycle, was completed a period of 700 years, embracing 25 reigns from Mestraim, the first native king of Egypt." Now, I believe, that this is at bottom a quotation from some ancient document, and that this Koncharis is the Chencheres, Chebres, Bicheres, or Bocchoris, who was lost in the Red Sea, and whose reign was closed, not by the first invasion of the Shepherds as Syncellus places him, but by the second invasion and the Exodus, which Manetho himself connects together; and that the passage was originally to the effect—"That in the last year of the reign of this Koncharis or

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Bocchoris, the 25th king of Egypt, was completed a period of 700 years, embracing 25 reigns, from Menes, the first native king of the 16th dynasty; which dynasty succeeded the 15 generations of that cycle which, by Manetho, is called the Cynic." * Now this is in accordance with the fact, viz. that this Bocchoris was about the 25th king† of Egypt, and that the last year of his reign, that is, the year of the Exodus, B. C. 1491, was exactly 700 years from the first of Menes, B. C. 2192; and this is also consonant with the tablet of Abydos, and differs but little from the Old Chronicle. But at all events this is distinctly manifest from the passage as it stands, and without any correction, viz. that 700 years after Menes, that is, at the exact date of

* Compare passages in p. 140, Anc. Frag. with p. 89, and second note in p. 91.

† The tablet of Abydos would place him as the 22nd: but the insertion of the 3 shepherd kings, who had completed their reigns, would place him exactly as the 25th.

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the Exodus, 25 kings had reigned; which is a full confirmation that the tablet of Abydos contained almost a complete catalogue of kings who reigned from the commencement of the kingdom; and that this Koncharis was the Pharaoh who was lost in the Red Sea.

Chencheres, or Bocchoris, was succeeded by Ramesses I., the founder of another line. His reign was but one year; and was followed by that of Armais, whose tomb was discovered by Belzoni, under the directions of Mr. Salt. Armais reigned 5 years according to the literary fragments; but, according to the monuments, 8 or 10 might be allowed him. He was succeeded by Ramesses II., or the Great, the mighty conqueror, the Sesostris of the Greeks. This is the king, who, according to Manetho, left the kingdom in the early part of his reign, and pursued a career of foreign conquest, and appointed as viceroy

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during his absence, his brother Armais, who bore the same name with his father. Armais usurped the throne, but was driven out by the return of his brother, when the king is said to have taken the name of Ægyptus, and his brother that of Danaus. And the same story is related of Sesostris by Herodotus. The monuments agree with the history in proving, that this monarch over-ran a considerable tract of country with a large and victorious army, and his name appears upon the tablet on the Nahar el Kelb, in Syria;* and, according to Herodotus, was in his time upon a similar tablet near Ephesus. His reign was very long and prosperous. He was a great patron of the arts, and covered both Upper and Lower Egypt with the most magnificent buildings. Objections might perhaps be taken to the position here assigned to Ramesses II. within 20

* For this I am indebted to Mr. Bonomi, who has taken a cast of the tablet.

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years after the catastrophe of the Exodus, on account of his power and prosperity, and from no notice having been taken in the Bible of his conquests. The last objection is obviated by the recollection that his conquests, or rather, we should say, his expedition, for it was nothing more, took place whilst Israel was in Horeb; and from many passages in Scripture it is evident that the calamities of the Exodus were confined more especially to Lower Egypt, or rather to the Delta. Thus, in the 89th Psalm, it is expressed, "Thou hast subdued (not Egypt but) Rahab, (that is, the Delta,) and destroyed it." And in Isaiah, "Oh arm of the Lord, art thou not it, that hath cut Rahab, and wounded the dragon? Art thou not it which hath dried the sea, the waters of the great deep? that hath made the depths of the sea a way for the ransomed to pass over?"* The strength of Upper

* Ch. li. 9. See Bocchart, that Rahab particularly signifies the Delta, the *Rib* of the present day.

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Egypt was consequently unimpaired, and perhaps increased by the extinction of the troubles, which had so long afflicted Lower Egypt. And indeed, the sceptre seems to have passed to a line of kings who were not hostile to the Israelites: for in their names and signets they seem to have adopted hieroglyphics, which had been especially borne by Joseph, as the square-eared symbol by Armais, and the symbol of Justice by Ramesses. Nor did hostility to the Egyptians exist in Israel after the Exodus, for Moses, in his law for the naturalization of proselytes, gives an express privilege to the Egyptians.

There has been considerable difficulty to ascertain whether the names and signets upon the monuments of Ramesses the Great really belong to one or two kings. Mr. Wilkinson* states that he is still of opinion that they belong to one only. Nor is it altogether clear whether

* Thebes.

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Ramesses I. or Ramesses II. was that king, who was called Ægyptus. In the list of Theophilus, both Ramesses I. and II. bear the name of Sethos. In Eratosthenes we have Saophis, and Sensaophis or Saophis II. in the corresponding places, who, in the Memphite dynasty, appear as Suphis and Suphis, and are said to be the builders of the pyramids, attributed to Cheops and Chephren by Herodotus.* Both Eratosthenes and the Memphite list omit Armais, the intermediate king, but the monuments decidedly prove that this Armais was the son of Ramesses I., and the father of Ramesses II. There is a manuscript fragment of Africanus in ex-

* Both Herodotus and Diodorus have evidently misplaced the founders of the pyramids Cheops, Chephren, and Mycerinus. It is possible that Ramesses the Great might have repaired and cased the pyramids. There are no inscriptions on or in them now. But Abd-e-Lateeph relates, that before the casing was stripped to build the walls of Cairo, he saw them himself covered with hieroglyphics.

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istence, cited by Kircher* from the Vatican, in which this Suphis of the Memphite dynasty is called Southis, and in which he is said to have erected many pyramids, which Abnephius, in the Arabic, translates as obelisks. Pliny† also says that Sothis erected several obelisks. Ramesses II. is also evidently the same with the Osymandyas or Ismendes of Diodorus; as that author, under the name of the sepulchre of Osymandyas, describes the Ramesseion. Ramesses and Sethos, by the frequency with which they are substituted for each other, seem to be interchangeable, and perhaps synonymous; and with the latter the name of Ismendes is likewise connected, as both Seth and Mendes are names of the god Khem.‡ And this appears to me to give the solution why the Greeks stated that this king changed his name to

* Obelisk. Pamph. Proem.

† Lib. xxxvi. c. 8. ‡ See Mythol. Inq. p. 44.

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Ægyptus, and that the country was thenceforth called Ægypt from his name, because he appears to have assumed the name of the god Seth or Khem; and Egypt (which in the ancient Hebrew and in the modern Arabic retains its original appellation of Mizraim or Mizor) in the hieroglyphics and in the Coptic is known only by the name of Khemi, or the land of Ham. The same remark may perhaps tend to solve the question, whether the names and signets of Ramesses II. belong to one or to two kings, by showing that the difficulty arises simply from his having adopted another name.

There are very few points in the more ancient history of the world better established, than that the emigration of the colony of Danaus from Egypt took place at the same time with the Exodus of the Israelites. The colony of Cadmus followed at an interval of but a very few years, as is expressly asserted by Dio-

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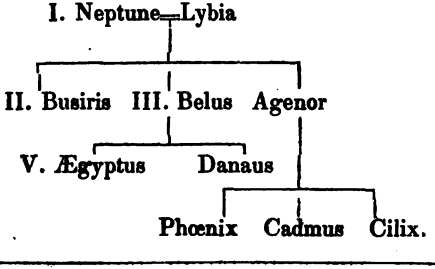
dorus* and Eusebius. The Parian Chronicle, and other authors, place the colony of Cadmus 8 years prior to that of Danaus. At all events this is clear, that two colonies left Egypt for Greece at an interval of a few years of one another; and further, that the leaders of these two colonies were nearly connected in consanguinity with the Egyptian kings who reigned at the end of the 18th dynasty. A closer examination of the personages will throw further light upon the subject, and the monumental fragments will clear up the difficulties in the literary records.

The best authenticated Greek pedigree of the Egyptian kings and the Greek colonists is as follows:—



* Diod., Sic. v.

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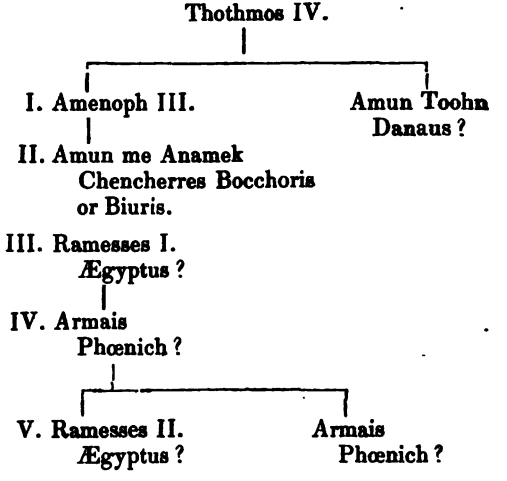
Of these Danaus is said to have led the first colony, and Phœnix and Cadmus the second. According to others, however, the sons of Belus were not Ægyptus and Danaus, but Cepheus and Phineus. And this Phineus is stated variously to be the son of Neptune, of Belus, or of Agenor. He was originally the same with Phœnix.

The corresponding Egyptian pedigree is,



As Ramesses I., Armais, and Ramesses II., the grandfather, father, and son, all succeeded to the throne within a pe-

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riod of six years, it is evident that Ramesses I. must have been far advanced in years at his accession, and consequently, a man of about the same age as Amenoph III. (who was a minor when he came to the throne). I suspect he was a brother of him and of Danaus.* And hence Amun Toohn or Danaus might very well be reigning in Greece, when the second colony left Egypt under the rebel brother of Ramesses II. Ramesses II. must also have been a contemporary with Bocchoris, as he was not a minor when he succeeded to the throne six years afterwards : and from this position follows another singular coincidence. The cities built by the persecuted Israelites were named Ramesses and Pithom. Now this could hardly have occurred before the names of Ramesses and Pithom came into use.

* This may have given rise to the supposition that Danaus was brother of Ægyptus, as it is not always very clear whether Ramesses I. or Ramesses II. was intended by Ægyptus.

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But at the time these cities were built by Amenoph and Bocchoris, the name of Ramesses was borne by two of their near kinsmen, who were afterwards Ramesses I. and II.; and Pithom is to be found in the name of the intermediate king, Ptha me Hermeen, or Armais, which, pointed as the Hebrew is, would read as Pithom-Hermeen.

If, however, we go a little deeper into the matter, I think we shall find that Cadmus, the leader of the second colony, is the same as Phœnix or Phineus. The leader of the colony which went out during the reign of Ramesses II., was his brother, named Armais; and he is said to have changed his name to Danaus, which I take to be a mistake, confounding one colony with another.* The name Armais I have shown

* The confusion between the names of Danaus, Armais, Phœnix, and Cadmus, shows how intimately they must have been connected. Apollodorus further states that the ship of Danaus was called Armais. Orpheus, also went out with Moses; and I have no doubt but that a fur-

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is the same with Phœnix; and if we recur to the accounts of Manetho, he states that the leader of the Exodus was a priest of Heliopolis, who, from Osiris the god of Heliopolis, was called Osarsiph; but when he deserted to the Israelites he changed his name to Moses. Diodorus says that there were three leaders—Moses, Cadmus, and Danaus. And Chæremon states that there were two, Moses, whose Egyptian name was Tisithen, and Joseph, whose Egyptian name was Peteseph. Bryant examines this point, and states truly, that Sar in Hebrew and other languages, and Pete in Egyptian, are but titles of honor, signifying Lord; and that Osarsiph and Peteseph signify the Lord Joseph: and to that extent he is not far from

ther investigation would connect the Argonautic voyage with these events, and shew that the Aia, the land, to and from which they went, was not Colchis, but Egypt, for it was a name common to them both.

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the truth. But I think he has hardly gone to the bottom of it, in concluding that the patriarch Joseph was intended, and that the introduction of the name of Joseph is a groundless mistake of authors, who have confounded together in one event the two great leaders of Israel in Egypt. Joseph bore the name of Phœnich, and was considered the second Thoth, the Hermes of the Greeks. The rebel brother of Ægyptus, who fled to Greece, also bore a name, which Manetho in his Greek translation has rendered Armais, and the Jewish historian Hermæus; and which on the monuments appears with the square-eared hieroglyphic of Joseph, and reads, as I have shown, Phœnicheen, or Hermeen, with the prefixes Amun me, or Pthah me. The Greek leader of the second colony was this Armais or Phœnix; and as the name of Zaphnath Phœnich was substituted for the name of Joseph upon his first interview with Pharaoh, I conclude

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that here the name of Joseph has been substituted or read for the name Phœnich (the square-eared hieroglyph being the symbol of both those names); and that the Osar-siph of Manetho is simply a various reading for Osir* or Amun me Phœnich, and the Peteseph of Chæremon is simply the Ptha me Phœnich of the monuments; and that Joseph Peteseph and Osarsiph are here but various readings of the names of this Phœnix, who led the second colony. It is possible that some members of the family of Ramesses II., or Ægyptus, may have accompanied him, and fled to Danaus, who reigned in Greece long after his flight from Egypt, and may have given rise to the story of the marriage

* By most of the Egyptian discoverers the name of Armais is read Osiree. There may be some connexion between it and Osiris, for there is a passage relating to the first Phœnix in Sanchoniatho, who states—that Isiris, the inventor of the three letters, or kinds of writing, was the brother of Chna, the first who was called Phœnix.—Anc. Frag. 16.

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of the sons of Ægyptus with the daughters of Danaus. I therefore conclude that the first colony, which left Egypt for Greece, was that of Inachus, at the first expulsion of the Shepherds; and the second that of Danaus with Moses; and the third, a few years afterwards, that of Phœnix, Armais, or Cadmus, who fled from his brother Ægyptus, or Ramesses II., to Danaus, who was still reigning in Argos.

The contrast of these pedigrees opens to us another curious view. If the great Greek colony went out with Moses, it would have been singular if no tradition had been handed down among their descendants of the cruelties, and miraculous destruction, of the tyrant, from whom they fled. Accordingly we find among the Greeks a tradition respecting a king Busiris, who lived about this time. His legend mentions, that in his reign a grievous famine occurred; that he was remarkable for his cruelties, especially to strangers of a

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red-haired race, whom he sacrificed on the altars of his idols. It is further related of him, that when the Tyrian Hercules went down into Egypt, he took and bound him for the purpose of sacrificing him, but that the hero liberated himself, and offered up the tyrant and his officers upon the altar he had prepared. This Busiris was a son of Neptune and Lybia, a brother of the Egyptian Belus and Agenor; and if we look back to the pedigree, he occupies the very place with Biuris, the Bicheres, Bocchoris, or Chencheres, the king who was lost in the Red Sea. The red-haired strangers that he sacrificed were evidently of the shepherd race: and that the Tyrian Hercules who slew him was Moses, might easily be proved from other independent sources, except for the digression.

The successor of Ramesses II. in Eratosthenes is Moscheres, the Mycerinus of Diodorus and Herodotus; who un-

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dertook, according to these historians, to raise another pyramid, but died before its completion. He is the Mencheres of the Memphite dynasty, and the Menophis or Amenophis of Manetho, according to the dynasties and version of Josephus, but his name upon the monuments is not yet agreed on. Mr. Wilkinson, as an approximation, constantly uses Pthahmen; M. Champollion, Menephtha; and Mr. Cullimore, Pthahmenophth. In the different Greek versions of his name we have again the substitution of Cheres, or Ares, for Phthah, as Mencheres, is a direct translation of Menephtha, or Pthahmen. This king closes the 18th dynasty.

The 19th dynasty will add further confirmation to the positions which have been taken. The next dynasty of kings ruling in Memphis is the 6th of Manetho. The different corresponding dynasties are as follow :—

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Eratosthenes.	*Manetho 19th.*	*Monuments.*	*Memphites.*
18. Musthis 33.	1. Sethos . 51.	Phthah men se. Phthah	1. O thoes 30.
19. Pammes Archondes 35.	2. Rapsaces 61.	Osiri men Phthah	2. Phius 53.
	3. Ammenephthes . 20.	Osiri ta Remerer	3. Methusuphis . 7.
20. Apappus Maximus 100.	4. Ramesses 60.	Ramesses III.	4. Phiops 100.
21. Echescosocaras . 1.	5. Ammenemnes . . 5.	Ramesses IV.	5. Menthesuphis . 1.
22. Nitocris Queen . 6.	6. Thuoris husband of Alkandra . 7.	Ramesses V.	6. Nitocris 12.
		Ramesses VI.	
175	204		203

In the monumental Se Phthah we may perhaps recognise the name of Sethos, and of Musthis, which will resolve itself into Me-Sethos, and perhaps also Othoes, which is by Eusebius given as Thoes. He appears to have reigned in right of his wife, and is omitted in the Theban list. Phius and Osiri men Phthah again appear to afford some slight similarity. The reign of Osiri ta Remerer coincides with that of Methusuphis. With Apappus Maximus, Phiops, or, as other catalogues give the name, Aphiops, agrees both in sound and in the singularity of

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a reign of 100 years, followed by another of only one, and that succeeded by a queen Nitocris. This Apappus I think may be identified with Ramesses III. The last is a queen Nitocris, a word, the interpretation of which by Eratosthenes, is Athena or Neith the Victorious; in the Memphite dynasty, according to Eusebius, it is rendered *virorum fortissima*, which is equivalent to the Alkandra of Manetho. In her reign, or in that of her husband Thuoris, a Ramesses according to the monuments, Troy was taken, and with this Pliny so far coincides as to state that it was taken in the reign of a Ramesses. Herodotus and Diodorus both state that Proteus was king of Egypt at the time, and this is perhaps a variation of Phra Thuoris, as the date here assigned corresponds exactly with that given by the Parian Chronicle as B.C. 1209. Most authors place it about B.C. 1183; but Duris Samius, and the author of the life of Homer, much higher.

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Having thus traced the parallel to the end of the 19th dynasty, I think it has been found amply to confirm the supposition, that Eratosthenes, after giving the first or 16th dynasty, omits the Shepherds and such kings as were contemporary, and passes to the 18th, which is followed by the 19th dynasty, concluding with Nitocris the 23rd sovereign of his history. The position of this dynasty is verified by the reference to the Trojan war; and during this dynasty another Sothic cycle, that of Menophes, the well known cycle of B.C. 1321, must have commenced.*

The works and wars of Ramesses III. are much celebrated on the monuments;

* The commencement of this cycle is most accurately determined by Censorinus, and by a MS. work of Theon, an extract of which was procured for me by M. Champollion from the library of the king of France: part of this valuable fragment was given by Larcher; it will be found entire, Anc. Frag. 329.

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and he appears to have been ambitious of rivalling in every respect Sesostris or Ramesses II., and I take this to be the Mœris whom Herodotus mentions as living about 900 years before his time, and the Mendes (that is Sethos) whom Diodorus states to be the same with the Marrhus, who constructed the labyrinth. This remark of Diodorus clearly distinguishes the two Mœris'; the first of whom he calls Myris, and identifies with Thothmos III., by placing him 7 generations above Sesostris, and by attributing to him the celebrated lake Mœris; and the last, Marrhus, he identifies with Ramesses III. as the founder of the labyrinth, and as an almost immediate predecessor of Proteus, in whose reign the Trojan war occurred.

The strange and ludicrous mistake, in which the learned found themselves involved in the discussion upon the zodiac of Dendera, when they *demonstrated astronomically*, that that monument must

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have been *actually* erected some ages before the deluge, and afterwards upon the interpretation of the hieroglyphics, discovered it to be a work of Roman times, is a lesson which should render us cautious in the conclusions to be drawn from similar astronomical data. There are now under discussion three astronomical tablets, that of Edfou, that of the tomb of Armais, and the most important the zodiac of the Ramesseion. This zodiac is taken to be of the age of Ramesses II., because his name is every where inscribed upon it, and I have no doubt but that it is so. Now the problem is, by the position of the Egyptian months inscribed, as in connexion with the constellations, to determine the epoch of its erection. M. Champollion, M. Biot, Mr. Wilkinson, Mr. Cullimore, and many others have turned their attention to this subject ;—they have all drawn conclusions from it, by which they have fixed the date of its erection,—are all

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equally confident of the result,—and they almost all differ from one another. As they differ, the greater part of them must be wrong, and, with the utmost deference I must confess, that I am unable to follow any of them to the conclusions which they have deduced, (not for want of a competent knowledge of astronomy upon my part, but) because they all seem to me to gather data and inferences from the monument before us, which, in some instances, I cannot find, and, in others, cannot admit to be legitimate. There is one important circumstance which is not sufficiently attended to, viz. that there were several cycles commenced in Egypt, and consequently it is far from clear to which cycle the months upon any given monument belong. The Greek and Roman sovereigns, when they became acquainted with the true principles of reckoning time, were ambitious of having the cycles commence from their own reigns; thus

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Philip, and Alexander, and Julius, and Augustus, and Dioclesian, each commenced a new cycle from themselves. Nabonnasar of Babylon did the same; and to that cycle Ptolemy has referred his dates. In like manner the Egyptian kings seem to have had the same ambition; and there are still to be traced fragments, which show, that there were new cycles commenced in the reigns of Thothmos I., of Thothmos III., of Ramesses II., and of Ramesses III., which last I take to be that of Menophres or Mœris of B.C. 1321. The Phœnix is said also to have appeared again in the reign of Amasis.

Of the 20th dynasty the names are lost. The catalogues record them to have been 7 or 12 kings, reigning 108, 135, 172, or 178 years. Syncellus gives for them a list of 7, from the 50th to the 56th in his canon, which are manifestly erroneous. But I would observe

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the curious and, I hope, fortunate manner in which Syncellus has contrived to lengthen out his dynasties. He appears to have compiled them not altogether without authority, but to have had several ancient documents before him. He has for the first 7 kings inserted the names of 5, and has given two anonymously; and these, I suppose, answer to the first dynasty. He has then given Sheshonk for the 8th king, and, for the 25th, Koncharis, to whom I have before had occasion to advert; and he appears to have filled up the interval between the 8th and 25th, by inserting some names of the 18th dynasty with some list of the intermediate kings, between that dynasty and Sheshonk; and I have little doubt, but that among these names, which are for the most part variations of the name of Ramesses, we shall find the lost names of the 20th dynasty, whose monumental names and signets are already before us. It is quite clear

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that he has used some ancient list, by the manner in which he has completed the rest of his catalogue; for after Sheshonk he gives the 17th, and then the 18th dynasty, then Thuoris of the 19th, next, part of the 26th Saite, and some others, then again Thuoris, followed by part of the first Thinite dynasty, and then the 21st.

The corresponding list of Eratosthenes lies between the 23rd and 29th of the kings of his canon, of whom at present I can only identify the Ousimaris or Thysimares, the 20th of Syncellus, who is plainly the Thyosimares or Ouosimares, the 24th of Eratosthenes. There was also a celebrated king of the name of Nilus, or Nileus, who lived a generation after the Trojan war, who is mentioned by Diodorus and others as a king of Egypt. He consequently falls within the 20th dynasty, and would therefore be one of the Ramesses. The 25th king of Eratosthenes is Thinillus, which in one of

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the MSS. is given as Sethinilus, and as he occupies exactly the position stated, I have no hesitation in identifying him under the name of Sethos Nilus, or Ramesses Nilus, with the Nileus of Diodorus and others, and with the Rampsinitus of Herodotus, who are the next important kings mentioned by those authors. I should take the 20th dynasty as stated in the different lists to be,—

Eratosthenes.		*Monuments.*	*Syncellus.*	
Myrtæus Amonodotus	22	Ramesses VII.	Rhamesses	29
Ouosimares	12	Ramesses VIII.	Rhamessomenes	15
Sethinilus	8	Ramesses IX.	Ousimares	31
Semphrucrates	18	Ramesses X.	Rhamesseseos	23
Chuther Taurus	7	Ramesses XI.	Rhamessameno	19
Meures Philoscorus	12	Amun mai Pouee	Rhamesse Jubasse	39
Chomaephtha	11	Amunmeses	Rhamesse Vaphris	29
	90			185

Of the 21st dynasty we have again the names of 7 Tanite kings, and all the lists agree in allowing them 130 years;

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and with these, I suppose, the next 7 kings of Eratosthenes were contemporary. The last of Eratosthenes is Amuthantæus, or Amyrtæus, according to some of the various readings; and this Amyrtæus I would identify with the Amahorte, whose sarcophagus is in the British Museum, whom Mr. Tomlinson* has shown to be the maternal grandfather of one of the Osorkon's in the Bubastite or 22nd dynasty, and this brings down the Laterculus of Eratosthenes and all the lists to unite in the acknowledged and well authenticated era of Shishak, from whence both Manetho and the monuments descend in harmony to the classic age.

The result of these observations I have thrown into a tabular form.

Having in the beginning hypothetically assumed the chronology of the authenticated version of our Bible to be correct, I have been myself utterly sur-

* II. Trans. of R.S. of Literature, 457.

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prized at the result. Expecting to meet, at every step, those difficulties, which have induced almost all chronologers either to extend or shorten the common system, I have been astonished to find, that not only the history of the Jews according to the Hebrew numbers, but the Egyptian dynasties of Manetho, and almost every scrap of Egyptian history, both literary and monumental, as well as all the authenticated traditions of the Greeks, naturally, without any violence, fall in with this system of chronology,—that the recorded traditions of these nations all start from the same epoch, embrace the same period, and unite again at the same time in the events, with which the acknowledged and authenticated history of the classic age commences,—that in the detail, in all the remarkable events in which these nations came in contact with one another, they accurately correspond in date, as—in the different traditions of the deluge—of the

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planting of the nations—of Inachus and the Shepherds—of Joseph and the rise and prosperity of Egypt—of the Exodus, Danaus, Ægyptus, and Phœnix, all connected, and within a few years of one another—while the armies of Ramesses II. seem to have passed through Canaan during the residence of Israel in Horeb—and the conquests of Ramesses III. to have been effected during the troubles and depression of Israel under the Judges. So also we find the era of the Trojan war, and Nitocris, and Alkandra coinciding with one another, and with the Assyrian tradition of the same event. So again the eras of Shishak and Rehoboam correspond, and those of Nebuchadnezzar and Pharaoh Necho. Nor does this occur only in the great outlines, but at every step a variety of coincidences has been pointed out. And, as all these have been obtained by a simple enumeration of the numbers handed down to us with scarcely a cor-

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rection, and not one without some good authority, the confirmation appears to be so strong, that I am utterly at a loss to conceive, why chronologers have so busily employed themselves, in the first instance, in twisting the events recorded in the heathen world and the Egyptian dynasties, out of their places, and then falsifying the Hebrew numbers to bring them into an agreement with their own distorted systems. I would not be understood to assert that no difficulties and inconsistencies occur in the accounts of ancient authors; but I would particularly advert to the circumstance that where they do occur, we find abundant materials and historical fragments, still extant, which give a corrected statement of the case. Thus though the lengthened chronologies, delivered by the priests of Egypt to Herodotus and Diodorus, appear to countenance the supposition, that all the 30 dynasties of Egypt were deemed successive, yet the

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Old Chronicle gives a full explanation of the inconsistency, by showing that the 16th dynasty was in fact the first of mortal kings; and a closer examination shows that Manetho, in attempting to fill up the 15 preceding with royal names, has given but repetitions of kings who are to be recognized in later times; and that what have been considered as the first 15 dynasties of kings were nothing more than some cyclical computations.

The great problem of Egyptian chronology is to fix the position of the 18th dynasty. The simple enumeration of Manetho's numbers either downwards from the 16th dynasty, or upwards from Shishak, or upwards from the Trojan war, or as coeval with the emigration of Danaus and Cadmus, all conspire to place it as coincident with the sojourn of Israel in Egypt; and if we seek to alter this we are instantly surrounded with difficulties. If we raise it—the generations, which appear upon the monuments of Egypt

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as preceding it, would extend themselves above the flood; and this difficulty cannot in any manner be removed by raising the date of the flood upon the authority of the numbers given in the Septuagint and Samaritan versions; because, though those versions give additional *years*, they give no additional *generations*, and for the introduction of additional generations there is not the slightest authority.*

* The great argument for extending the Scriptural chronology, and of adopting the lengthened chronology of the Samaritan or Septuagint versions, has ever been the supposed impossibility of the world being sufficiently peopled in so short a time as at the era B.C. 2192, or about 150 years after the flood, as to render the dispersion requisite. The argument is completely annihilated by the observations of Mr. Cullimore in his reply to Mr. Cunninghame, in the Morning Watch, viz., "that the Hebrew numbers place upon an average each generation, i.e. the birth of each first-born, at intervals of 30 years, whereas the Samaritan and Septuagint numbers extend their chronology 700 or 800 years, only, by placing upon an average each generation, or the birth of each first-born, at intervals of 130 or 80 years, inserting before each

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Again, if we lower the 18th dynasty, the difficulties appear to me to increase; for this can only be obtained at the expense of Egyptian history, by striking out, below, recorded dynasties of kings who clearly reigned, and whose monuments and tombs are still existing, severing at the same time all the connexion between the Hebrew, Greek, and Egyptian history, by separating the Exodus from the times of Danaus and Ægyptus, and in allowing the conquests of Ramesses III. to have swept over Judea during the reign of David.

descent 100 or 50 years; by which, in point of *population*, nothing can be gained, for it is manifest that as the casualties in 30 years must be less than in 130, where the lives are of the same length, so, according to the short Hebrew numbers, the population in the same number of *generations* must much more rapidly increase than according to the more extended period; and the population upon the Hebrew computation must, in the allotted 150 years, have been almost one-half as much again as in the most extended of these computations.

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Nor can I see what is to be gained by lowering the position of this illustrious dynasty. Men rose not by slow degrees from savage to civilized life; but the world began in a state of civilization, and after ages degenerated into savage life. From the account of Babel, it is evident that stupendous architectural buildings commenced in very early times. And the relation of the destruction of the cities of Sodom and the plain, and of Jacob's transaction with the city of Shechem, as well as the conquests by Joshua of Jericho and Ai, show that the cities of those times were protected by walls and gates, and must consequently have been places of consideration, so that the architecture of the 18th dynasty was by no means beyond the power or contemplation of the age here assigned it, as embracing the interval from Joseph to Moses. That the arts were also at the same time highly cultivated is manifest from the works of Moses in

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his erection of the tabernacle, into whose service almost all the arts of civilized life were pressed, from the jewelry of the ephod and breast-plate, to the weaving of the covering of the tabernacle, and of the linen of the priests. Signets in the age of Joseph were in common use, as Judah parts with his to Tamar, and Pharaoh to Joseph: nor would such a passage as the following have appeared in the book of Job,* unless the practice of sculpturing hieroglyphic writing upon rocks and buildings, and of writing upon the papyrus, had been a matter of the commonest occurrence. "Oh that my words were now written! oh that they were written in a book! that they were

* The date of the transactions recorded in the book of Job, from their internal evidence, appear to have been laid about the time of the birth of Moses, as Eliphaz the son of Teman is one of the speakers, and Teman was the son of Eliphaz the son of Ishmael; and Job himself was a descendant of Huz, and not so far removed, but that intimacy still subsisted between the speakers as relations. The best opinion is, that it was written by Moses.

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graven with an iron pen, and lead* in the rock for ever!" and again, "Oh that mine adversary had written a book!"

If, then, all the arts and sciences had, in the age of Joseph and Moses, arrived at such a degree of excellence, and if the Egyptian monarchs of that age had revenues far greater than any other sovereigns in the world, and indeed than any of their successors, I can see no reason, why we should not expect to find existing in Egypt, monuments of their wealth and power, or why so many chronologers should labour, against all historic evidence, to bring down the monuments of her splendour to an age, when Egypt had passed the meridian of her greatness, and her resources must have been on the decline.

With all the preceding deductions, and

* Query, a *leaden* mallet, such as our carvers and some sculptors use at the present day. Rosellini has given several pictures of Egyptians sculpturing with a mallet and stele; but the mallet is so small that it could hardly have been of wood.

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with the result of this inquiry, I must confess I am not perfectly satisfied: yet, in the present state of monumental discovery, I feel convinced that a far greater number of coincidences present themselves from assuming the correctness of the Hebrew numbers, and taking the records of Eratosthenes and the Greek historians as we find them, than from any other systems or alterations, that have been yet proposed.

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CHRONOLOGICAL TABLE.

4004. Creation.

2348. Deluge.

2192. Foundation of the kingdom of Egypt.

XVI. DYNASTY. 190 years. *OC. E. MTh.**

1. MENAI. 62.

Menes	*H. E. D. MT.*
Misor	*S.*
Mizraim	*SS.*
Naracho	*Mal.*
Necheroches	*MM.*

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* In this table the following abbreviations are used.

D. Diodorus Siculus.
E. Eratosthenes.
H. Herodotus.
M. Manetho.
MJ. Manetho according to Josephus.
MM. Memphite list of Manetho.
MT. Thinite list of Manetho.
MTh. Theban list of Manetho.
OC. Old Chronicle.
S. Sanchoniatho.
SS. Bible.
T. Manetho according to Theophilus.

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2130. **2.** THOTH I. 59.

Athothis . *MT.*
Athothes . *E.*
Tosorthrus *MM.*

The inventor of letters and medicine, the first who built with hewn stone in Egypt, and inscribed his monuments with hieroglyphics. He is said to be the same with Asclepius.

2071. **3.** THOTH II. 32.

Athothes . *E.*
Turis . . *MM.* Thoor? Tore?
Kenkeres . *MT.*

2039. **4.** DIABIES. 19. *E.*

Messochris. *MM.*
Venephes . *MT.*

Pyramids Building?

2020. **5.** PEMPHOS. 18. *E.*

Souphis . *MM.*
Usaphædus. *MT.*

Pyramids?

2002. Conclusion of the 16th or 1st mortal dynasty of Egypt, by the invasion of the Shepherd kings, who were not finally ex-

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pelled, according to Manetho, till 511 years.

XVII. DYNASTY. 103+151.

Native Kings. *Shepherd Kings.*

2002. ——— **1.** SALATIS . 19.

1983. ——— **2.** BEON . . 44.

1939. ——— **3.** APACHNAS 36.

1936. **6.** KERES. 16.

1920. **7.** OSIRTESEN I. 43.

Tosertasis . *MM.*
Misartesen . *Plin.*

He has left several obelisks and monuments in Egypt.

1903. **4.** APOPHIS 61.

1899. The power of the Shepherds, broken after 103 years in the fourth year of the reign of Apophis. Osirtesen I. appears to have rescued the greater part of Egypt from the dominion of the Shepherds. According to Africanus, the native kings and the Shepherds held joint possession during the next 15

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years. It seems to have been a period of trouble and alternate success; but from their works it is manifest that the native princes, or at least Osirtesen I. and Amun Muthah III., had during their reigns almost complete dominion.

1877. **8.** AMUN MUTHAH I. 16.

1861. **9.** AMUN MUTHAH II. 16.

1845. **10.** OSIRTESEN II. 16.

1842. **5.** JANIAS 50.

1829. **11.** OSIRTESEN III. 16.

1813. **12.** AMUN MUTHAH III. 41.

Reigned 41 years, and has left several monuments.

1792. **6.** KERTOS . 24

1772. **13.** HAKOR? 17.

Aches . . . . *MM.*
Uchoreus . . . *D.*
Alisphragmuthosis *MJ.*

Name uncertain.

1768. **7.** ASETH . 20.

In this 17th dynasty, I have allowed Osirtesen I. 43 years,

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and Amun Muthah III. 41 years, according to the monuments. For the rest I have averaged the interval at 16 years each.

1755. **14.** AMOS.

Siege of the Shepherds in Avaris.

1748. Expiration of the 151 years of the joint rule of the native princes and Shepherd kings. Expulsion of the Shepherds, and death of Aseth. From this year commences the 18th dynasty, in the 7th year of the reign of Amos, and, according to the Old Chronicle, continues 348 years.

XVIII. DYNASTY. 348.

1748. **14.** AMOS alone. 18.

Amosis . . *M.*
Tethmosis . . *MJ.*
Tœgaramachus, Momchiri the Memphite. 79 } *E.*

Chebron.

1730. **15.** AMENOPH I. 20

1729. Joseph sold into Egypt.

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1715. Regency which continued till the reign of Thothmos III.

JOSEPH. *SS.*

Chebron* *The Hebrew?*	*M.*
Amenenthe . . .	*Champ.*
Amun-Neit-gori . .	*Wilk.*
Amnnthh . . .	*Hierogl.*
Asnth, *Wife of Joseph* .	*SS.*

Appearance of PHŒNIX or the second Hermes, the reviver of the

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* I have placed the construction of the pyramids in the 16th dynasty, but I cannot refrain from suggesting an hypothesis, which affords some singular coincidences. Herodotus says that CHEOPS and CHEPHREN built them—that CHEOPS put a stop to the worship of the Egyptians,—prohibited their sacrifices, and closed their temples,—and was consequently in great disrepute with the priests, how declined to name him, but attributed the pyramids to a Shepherd PHILITIS, who at that time grazed his flocks in that part of the country. Diodorus says that these two kings were Chembes and Kephren or Chabruis, but, in another place, AMOS and HERMÆUS. This Cheops or Amos looks extremely like AMOS, the 1st king of the 18th dynasty, who put a stop to the human sacrifices in Lower Egypt; and CHEPHREN or HERMAEUS, his apparent successor, would coincide with this regent CHEBRON, the same as HERMES or Joseph, who put a stop to the idolatries

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arts, and god of wealth, in the reign of that king, from whose successor sprung the line of the Pharaohs (the family of the Thothmos'?). *Ced.*

1710. **16.** THOTHMOS I. and AMESSE. 22.

Mephra Thothmosis.

Mephres .	*MJ.*
Mœris . .	*H.*
Misaphris .	*MTh.*
Stœchus Ares	*E.*

---

of Egypt, and was a Shepherd from the land of the PHILISTINES, who at that time grazed his flocks in Egypt. The signet of Amos, according to Mr. Burton's copy of the tablet of Abydos, reads PHARAOH KB.: and Herodotus I believe uses the word Cheops only in its inflexions, giving Cheop, for the Egyptian name. This hypothesis would account for no hieroglyphics being found upon the pyramids, as most probably forbidden; and would be further sustained by these kings having been succeeded by Mycerinus or Cherinus, which resolves itself into MeCherres or MAres, Thothmos I. It would, however, lengthen the reign of Amos to the time of Joseph, which might be done at the expence of Amesse, and for which Eratosthenes is an authority. And to this hypothesis I feel a great inclination to assent.

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1706. Descent of Israel into Egypt. Regulation of the Calendar.—Appearance of the Phœnix.—Commencement of the cycle, which expired in the reign of Ptolemy Euergetes.

1688. THOTHMOS I. alone 12.

1776. **17.** THOTHMOS II. 27.

Mephramuthosis . .	*MJ.*
Methrammuthosis . .	*T.*
Gosormies Etesipantus	*E.*

1649. **18.** THOTHMOS III. 39.

Thothmos Mœris	*Champ.*
Thmosis .	*MJ.*
Tuthmosis . .	*MT.*
Thampthis .	*MM.*
Mœris . .	*H.*
Myris . . .	*D.*
Mares . . .	*E.*

It is highly probable that Joseph may have retired some few years before his death, and as soon as Thothmos III. came of age.

1635. Death of Joseph in the 21st year of Thothmos III.—Cessation of the regency of Amnnthh or

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Amun Neitgori. — Magnificent architectural works of Thothmos III.

1610. **19.** AMENOPH II. 31.

Amenophis . *M.*
Anouphis . *E.*

Persecution of the Israelites begins.

1579. **20.** THOTHMOS IV. 36.

Orus . . *MJ.*
Soris . . *M.*
Sirius Abascantus *E.*

1571. Birth of Moses and education in the court of this king.

1543. Regent during the minority of the two next princes.

ACHENCHERRES.

Chnubus Gneurus . *E.*
Kneph-Chen-Ares . ?

1543. **21.** AMENOPH III. & AMUN TOOHN.

Rathek . *Hier.* Danaus *Gr.*
Rhatœses . *MM.*
Rathotis . *MJ.*
Rauosis *E.*
Athoris . *M.*

1531. Flight of Moses.

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1530. Dissensions between Amenoph and Danaus.—Danaus expelled; but maintains himself a Pelusium.

1504. Danaus attempts to recover the kingdom, with the assistance of the Shepherds, and perhaps favoured by the Israelites. Amenoph associates his son with him, and retires to Ethiopia.

1504. **22.** AMUN ME ANAMEK. 13.

Achencheres II.	*MJ.*
Acherres .	*M. Eu.*
Chencheres .	*MT.*
Koncharis .	*Syn.*
Chebres . .	*M. Af.*
Bicheres .	*MM.*
Bocchoris .	*Tac. Lys.*
Biuris . .	*E.*
Busiris . .	*Greeks.*

1492. Death of Amenoph.—Return of Moses.—The Plagues of Egypt.

1491. Expiration of the 511 years, during which the Shepherds remained in Egypt. Exodus of the Jews under Moses, and of Danaus and his native followers,

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with the remnant of the Shepherds, Greeks, and mixed multitude. Destruction of the king Bocchoris and his army in the Red Sea. This occurred, according to Syncellus, 700 years after the foundation of the kingdom by Menes (viz., in 2192) and after 25 reigns.

1491. **23.** RAMESSES I. 1.

Sethos . *T.*
Suphis . *MM.*
Saophis . *E.*

1490 **24.**

AMUN or PHTHAH } ME { PHŒNICHEEN or ARMEEN. } 4.

Armais . *M.*
Hermæus *MJ.*

1486. **25.** RAMESSES II. 66.

Sethos . . . *T.*
Sothis . . . *Plin.*
Southis . . . *M. Af.*
Souphis . . . *MM.*
Saophis . . . *E.*
Sesoosis . . . *D.*
Sesostris. . . *Greeks.*
Osymandyas Ismendes *D.*

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Expedition of Sesostris over Syria and Asia Minor, whilst Israel is in Horeb. During his absence his brother Armais or Phœnich rebels, but his rebellion is suppressed by the king's return.—Departure of the last colony under Phœnix and Cadmus.—Expiration of the 518 years, the time stated by Africanus to be the period of the residence of Greek Shepherds in Egypt.

1418. **26.** AMENOPH IV. 19.
Phthahmen . *Wilk.*
Menephtha . *Champ.*
Mencheres . *MM.*
Moscheres . *E.*

XIX. DYNASTY.* 190.

1399. **27.** PHTHAH MEN SE PHTHAH. 33.
Sethos. . . *M* 19*th.*
Musthis. . *E.* Me Sethos?
Othoes or Thoes *MM.*

* The 12th dynasty of Manetho is evidently the same as this; and, as it commences with Sesonchosis, it affords a further confirmation, that among the successors of the Sesonchosis of Syncellus are the names of the kings of the 20th dynasty.

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Mr. Wilkinson says, that he was probably not admitted into the Theban lists from having been a Memphite king, or from having only succeeded to the throne by right of marriage with the princess Ta-Osiri.

1366. **28.** OSIRI MEN PHTHAH. 35.

Rapsaces . .	*M* 19*th.*
Phius . .	*MM.*

Pammes Archondes *E.*

1331. **29.** OSIRI TA REMERRER. 8.

Ammenemes. .	*M* 12*th.*
Methusuphis .	*MM.*

1323. **30.** RAMESSES III. 60.

Aphiops . .	*MM.*
Apappus Maximus	*E.*
Sesoosis II. . .	*D.*
Sesostris . .	*M* 12*th.*
Pheron . . .	*H.*

This king was a great warrior, and imitator of Ramesses II. Eratosthenes and the Memphite dynasty allow 100 years to him, and but one to his successor. I have no doubt that it is this king to whom Herodotus

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and Diodorus allude under the name of Mœris, Marrhus, and Mendes. He built the labyrinth and many buildings at Thebes.

1321. The cycle of Mœris or Menophres, commencing B. C. 1321, started in this reign,

1263. **31.** RAMESSES IV. 40.

Ammenephthes *M* 19*th*.
Lachares . *M* 12*th*.

The reign of Ammenephthes, extending 40 years, is placed by Eusebius after that of Ramesses III. There is much confusion between the two, as if there had been a regency: but it appears to me evident that the 100 years of Aphiops is divisible between them. Lachares is said to have built the labyrinth, which was a work of Ramesses III., who has also two tombs at Thebes.

1223. **32.** RAMESSES V. 1.

Echescosocaras . *E*.
Menthe Suphis . *MM*.
Ammenemes . . *M* 19*th*.
Ammeres . . *M* 12*th*.

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1222. **33.** NITOCRIS & RAMESSES VI. 13.

Nitocris and Thuoris *MM.*
Nitocris . . . *E.*
Alkandra and Polybus *M 19th.*
Skemiophris & Ammenemes *M 12th.*
Proteus . . . *D.*

The 12th dynasty intimates, that Skemiophris was a *sister* of Ramesses VI. From the monuments it is evident, that Ramesses III. was succeeded by three of his sons, with which the 12th dynasty will easily agree. And this queen Nitocris seems to have been their sister and a queen reigning in her own right, as Thuoris (perhaps Ramesses VII.) is expressly mentioned as her husband. And this is also confirmed by Herodotus, who states that Proteus was a Memphite.

Proteus is mentioned by Diodorus and Herodotus, in this place, as the king in whose reign Troy was taken.

1209. Troy taken according to the

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Parian Chronicle and all the versions of Manetho.

XX. DYNASTY. 108.*

1209. **34.** RAMESSES VII. 15.

Rhamesses . .	*Syn.*
Rhemphis . . .	*D.*
Myrtæus Ammonodotus	*E.*

1194. **35.** RAMESSES VIII 15.

Ousiomares . .	*Syn.*
Ousiomares . .	*E.*

1179. **36.** RAMESSES IX. 15.

Rhamessomenes .	*Syn.*
Nileus . . .	*D.*
Sethos Nilus . .	*E.*
Ramesses Nilus .	*?*
Rampsinitus . .	*H.*

1164. **37.** RAMESSES X. 15.

Rhamesseseos . .	*Syn.*
Semphucrates . .	*E.*

1149. **38.** RAMESSES XI. 15.

Rhamessomeno .	*Syn.*
Chuther Taurus	*E.*

1134. **39.** AMUN MAI POUEE. 15.

Rhamesse Jubasse .	*Syn.*
Meures Philoscorus .	*E.*

* I here follow Eusebius, and have allowed 108 years to the 7 kings of the 20th dynasty, averaging them at 15.

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1119. **40.** AMUNMESES. 18.

Rhamesse Vaphris *Syn.*
Chomaephtha . *E.*

The tombs of this dynasty are at Thebes. After this the sceptre passed to the kings of Lower Egypt.

XXI. DYNASTY. 130.

1101. THEBAN.		TANITE.	
Sæcuniosochus	60.	Smendes .	26.
Penteathyris .	16.	Psusenes .	46.
		Nephelcheres	4.
Stammenemes .	23.	Amenophthis	9.
Sistosichermes .	55.	Osochor .	6.
Maris . .	43.	Psinaches .	9.
Siphoas . .	5.	Psusennes .	14.
	14.		
Phruron. Nilus	5.		
Amyrtæus Ama Horte ?	63.		114.

XXII. DYNASTY.

971. SHESHONK. 21.

Shishak.

Invasion of Judea by Shishak, in the reign of Rehoboam.

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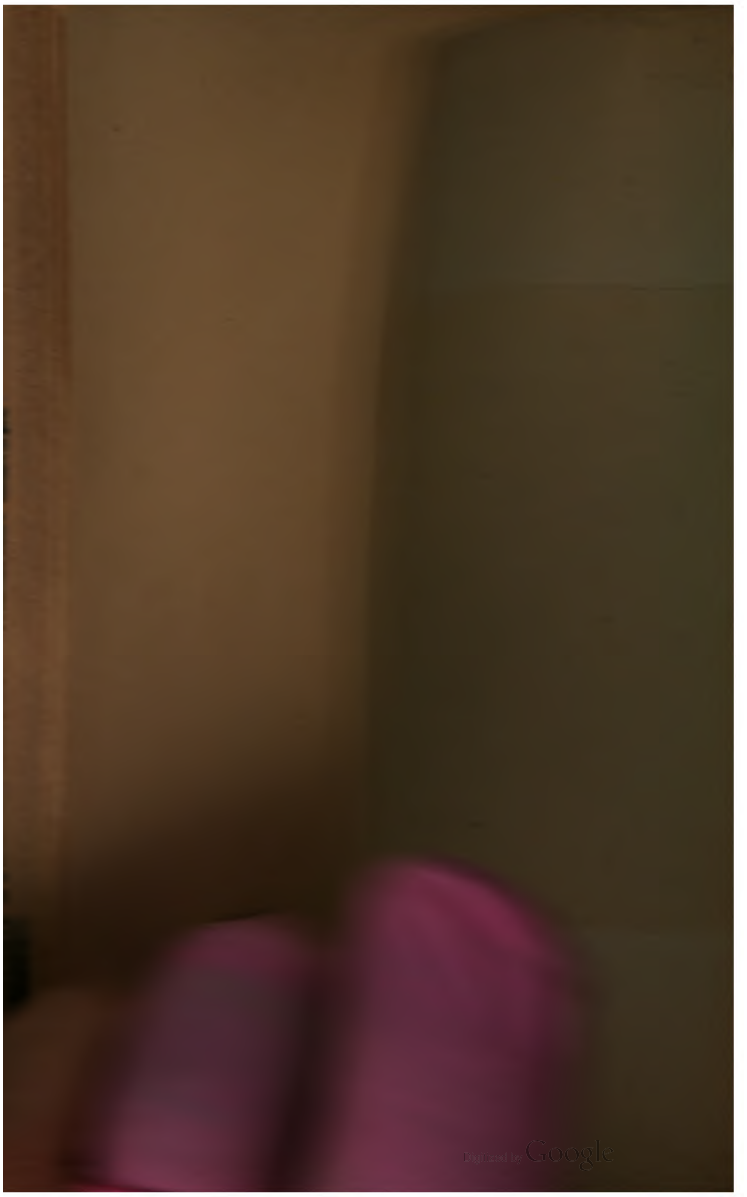
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